Pantheon Report

Generated at 2018-12-01 10:04:22 (UTC).

Data path: GCE Iowa on `ens4` (*remote*) →GCE London on `ens4` (*local*).

Repeated the test of 19 congestion control schemes 5 times.

Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.

NTP offsets were measured against `time.google.com` and have been applied to correct the timestamps in logs.
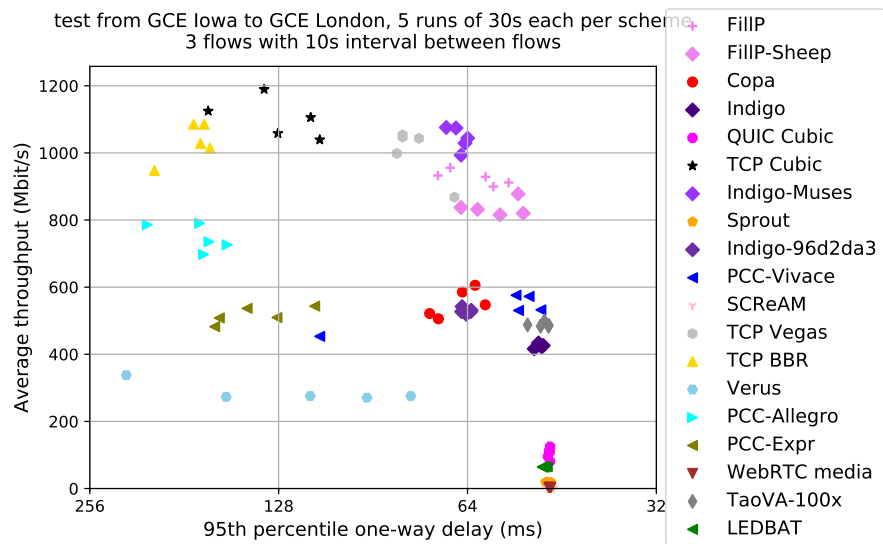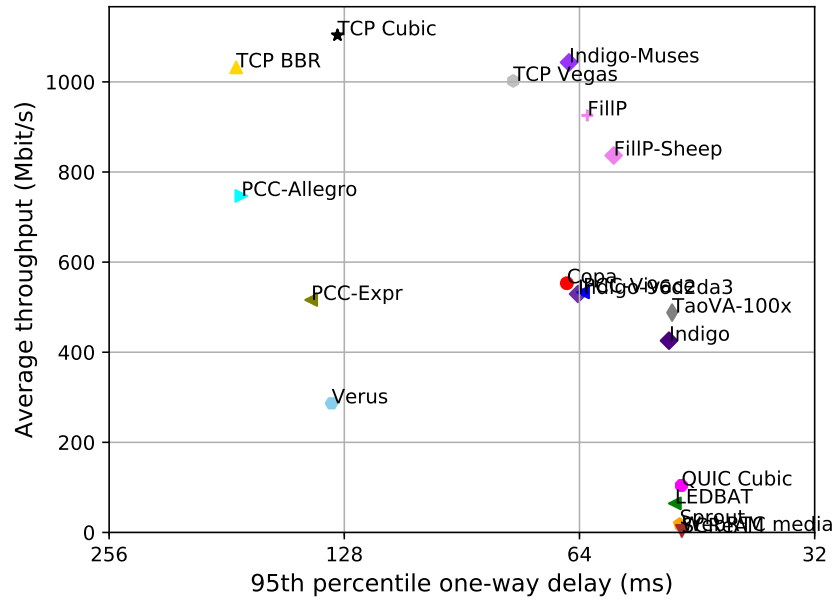
```
System info:
Linux 4.15.0-1024-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 7b6dad87cde3ab65f7c4052140eb54098aa58e9d
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
```

```
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from GCE Iowa to GCE London, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)

test from GCE Iowa to GCE London, 5 runs of 30s each per scheme
3 flows with 10s interval between flows

3

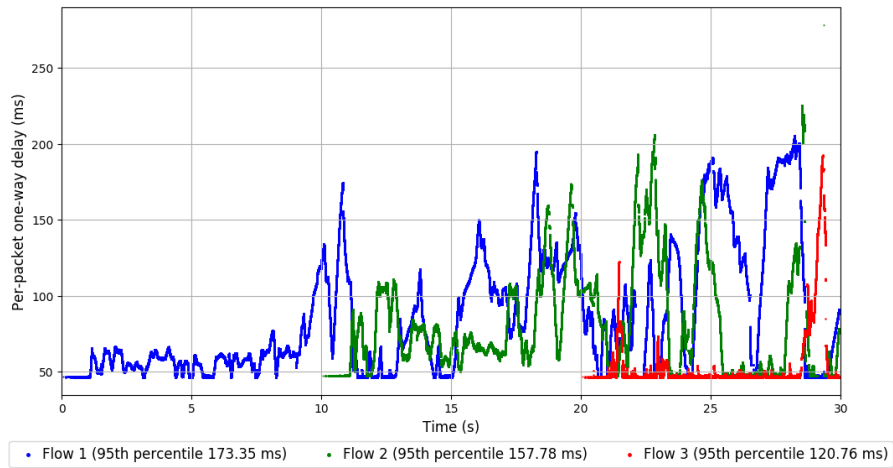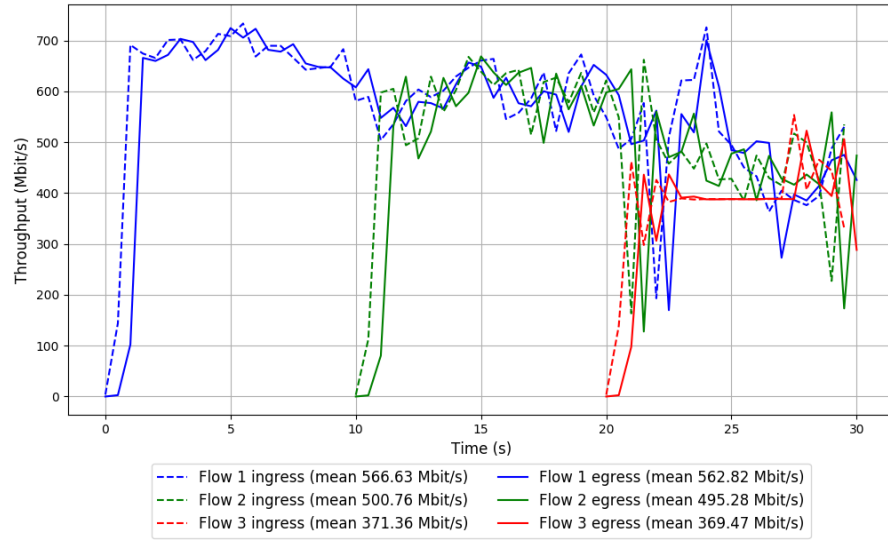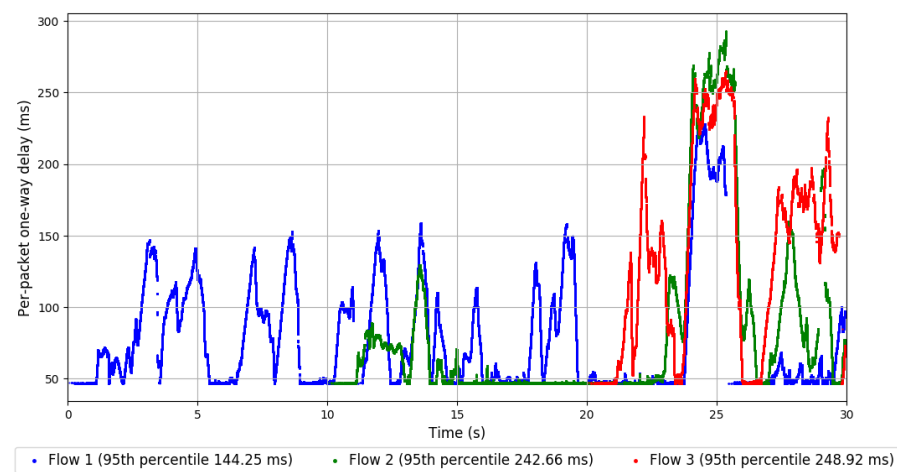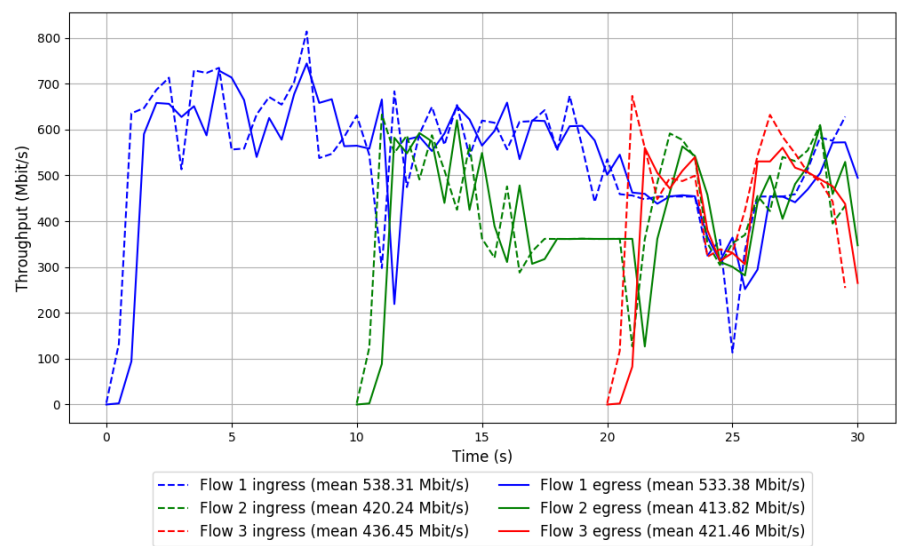| scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	545.01	505.61	457.03	169.29	175.72	171.04	1.57	1.52	2.47
Copa	5	293.32	264.79	253.33	65.57	71.32	68.52	0.30	0.50	1.03
TCP Cubic	5	581.54	536.60	499.45	135.99	115.02	108.76	0.37	0.64	1.27
FillP	5	591.85	380.61	246.03	66.72	51.89	49.91	0.17	0.35	1.09
FillP-Sheep	5	536.03	331.38	244.53	61.04	50.66	49.52	0.19	0.37	1.04
Indigo	5	225.42	209.01	185.33	49.25	49.19	48.80	0.32	0.49	1.11
Indigo-96d2da3	5	273.71	266.03	241.49	65.47	64.96	61.04	0.28	0.55	1.10
LEDBAT	5	41.36	27.85	13.81	48.43	47.90	47.53	0.63	0.94	1.91
Indigo-Muses	5	572.01	504.85	415.65	67.92	64.57	59.74	0.29	0.51	1.26
PCC-Allegro	5	430.45	346.57	264.44	177.95	111.54	130.36	5.42	3.25	2.13
PCC-Expr	5	310.95	253.97	111.20	139.74	128.16	55.65	2.00	1.35	1.25
QUIC Cubic	5	64.64	41.60	35.43	46.94	47.42	47.26	0.39	1.01	1.31
SCReAM	5	0.22	0.22	0.22	47.26	47.22	47.39	0.26	0.57	1.09
Sprout	5	9.62	9.29	9.20	47.47	47.57	47.43	0.33	0.55	0.93
TaoVA-100x	5	245.42	247.42	236.28	48.69	48.77	48.27	0.30	0.50	1.05
TCP Vegas	5	507.16	515.72	459.81	73.83	75.08	89.51	0.33	0.49	0.98
Verus	5	165.91	138.33	88.65	128.78	111.70	72.32	2.85	0.54	0.82
PCC-Vivace	5	315.79	291.48	71.86	64.47	61.58	47.46	0.31	0.61	1.50
WebRTC media	5	1.83	1.19	0.47	46.89	47.36	46.82	0.40	0.50	0.33

```
Run 1: Statistics of TCP BBR

Start at: 2018-12-01 04:35:27
End at: 2018-12-01 04:35:57
Local clock offset: -0.098 ms
Remote clock offset: -0.044 ms

# Below is generated by plot.py at 2018-12-01 07:41:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1014.09 Mbit/s
95th percentile per-packet one-way delay: 164.687 ms
Loss rate: 1.23%
-- Flow 1:
Average throughput: 562.82 Mbit/s
95th percentile per-packet one-way delay: 173.351 ms
Loss rate: 0.99%
-- Flow 2:
Average throughput: 495.28 Mbit/s
95th percentile per-packet one-way delay: 157.784 ms
Loss rate: 1.57%
-- Flow 3:
Average throughput: 369.47 Mbit/s
95th percentile per-packet one-way delay: 120.759 ms
Loss rate: 1.46%
```

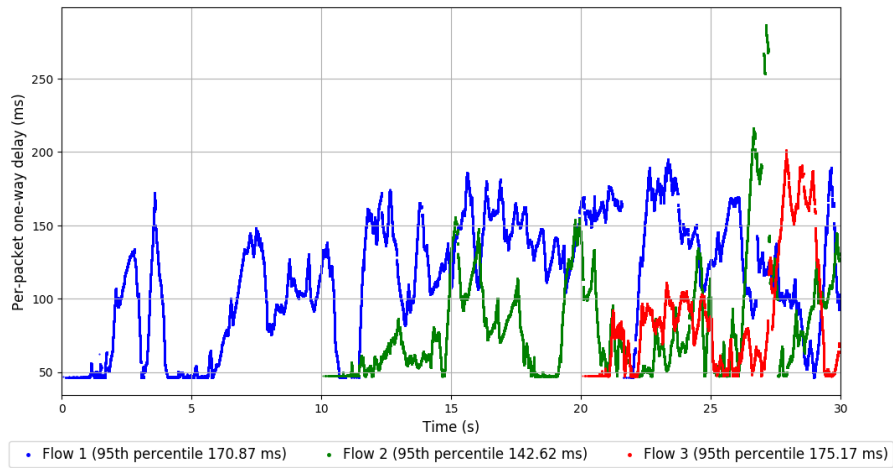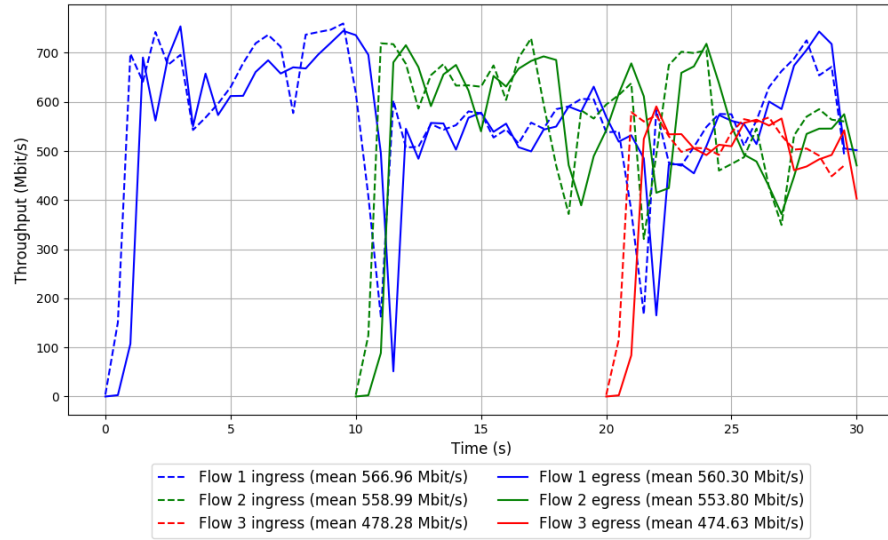Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-12-01 05:08:24
End at: 2018-12-01 05:08:54
Local clock offset: -0.498 ms
Remote clock offset: -0.061 ms


# Below is generated by plot.py at 2018-12-01 07:41:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 947.74 Mbit/s
95th percentile per-packet one-way delay: 201.892 ms
Loss rate: 1.92%
-- Flow 1:
Average throughput: 533.38 Mbit/s
95th percentile per-packet one-way delay: 144.255 ms
Loss rate: 1.23%
-- Flow 2:
Average throughput: 413.82 Mbit/s
95th percentile per-packet one-way delay: 242.662 ms
Loss rate: 2.00%
-- Flow 3:
Average throughput: 421.46 Mbit/s
95th percentile per-packet one-way delay: 248.916 ms
Loss rate: 4.36%
```
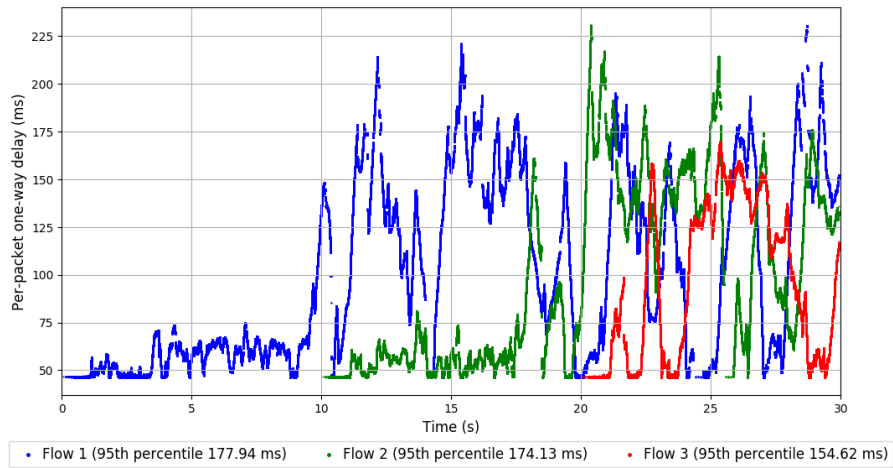
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-12-01 05:41:35
End at: 2018-12-01 05:42:05
Local clock offset: -0.19 ms
Remote clock offset: -0.025 ms


# Below is generated by plot.py at 2018-12-01 07:42:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1085.49 Mbit/s
95th percentile per-packet one-way delay: 168.222 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 560.30 Mbit/s
95th percentile per-packet one-way delay: 170.868 ms
Loss rate: 1.48%
-- Flow 2:
Average throughput: 553.80 Mbit/s
95th percentile per-packet one-way delay: 142.619 ms
Loss rate: 1.40%
-- Flow 3:
Average throughput: 474.63 Mbit/s
95th percentile per-packet one-way delay: 175.172 ms
Loss rate: 1.72%
```

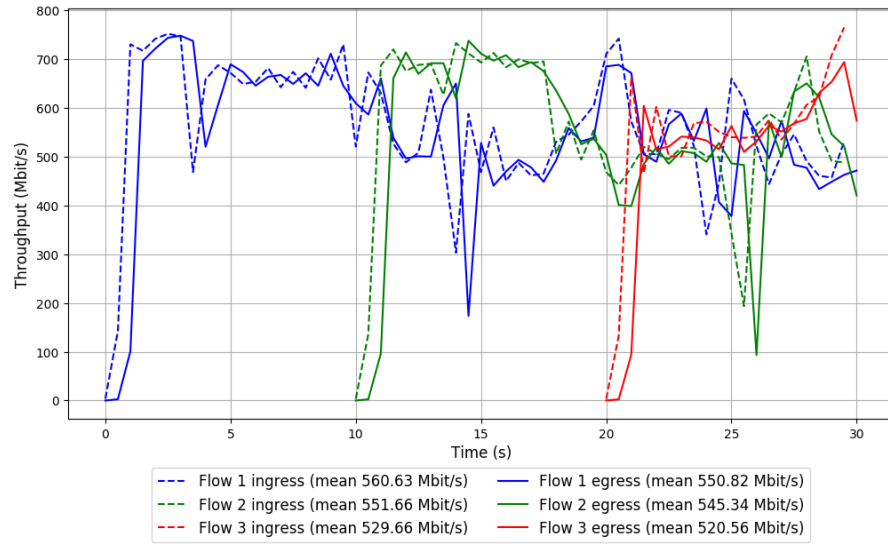# Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2018-12-01 06:14:42
End at: 2018-12-01 06:15:12
Local clock offset: -0.058 ms
Remote clock offset: -0.082 ms


# Below is generated by plot.py at 2018-12-01 07:42:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1085.47 Mbit/s
95th percentile per-packet one-way delay: 174.863 ms
Loss rate: 2.00%
-- Flow 1:
Average throughput: 550.82 Mbit/s
95th percentile per-packet one-way delay: 177.945 ms
Loss rate: 2.06%
-- Flow 2:
Average throughput: 545.34 Mbit/s
95th percentile per-packet one-way delay: 174.126 ms
Loss rate: 1.61%
-- Flow 3:
Average throughput: 520.56 Mbit/s
95th percentile per-packet one-way delay: 154.622 ms
Loss rate: 2.64%
```

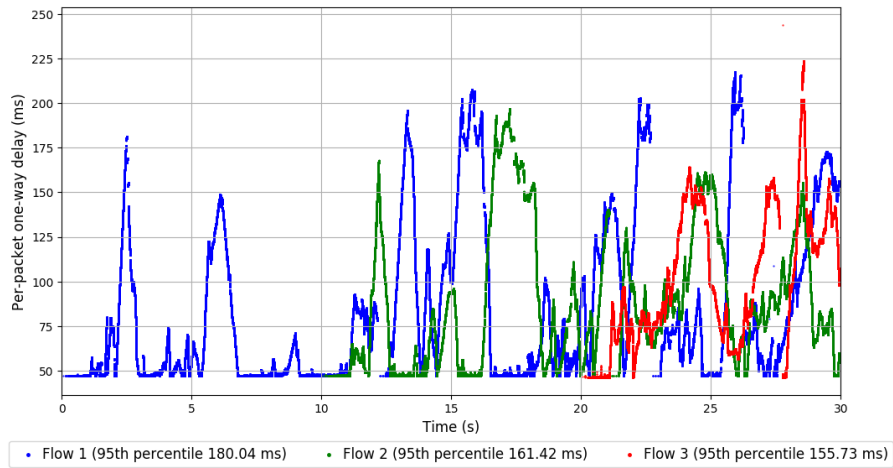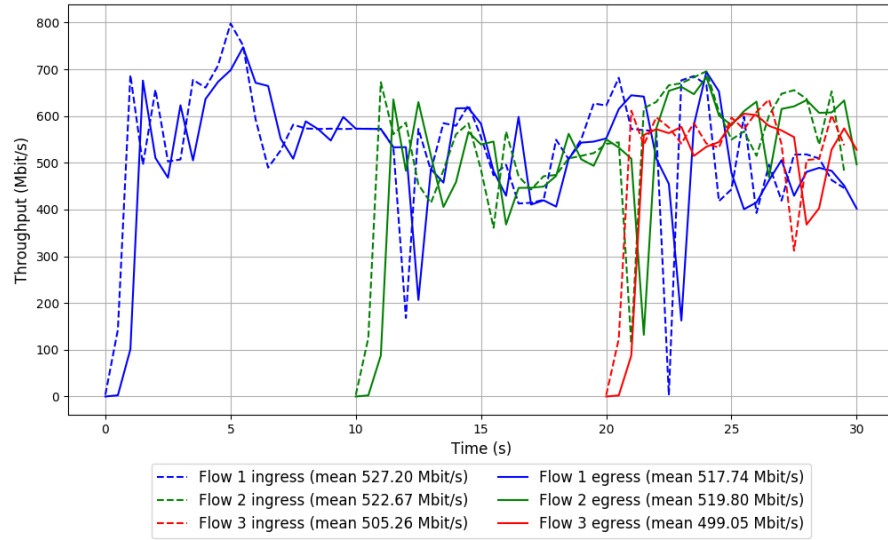Run 4: Report of TCP BBR — Data Link

```
Run 5: Statistics of TCP BBR

Start at: 2018-12-01 06:47:49
End at: 2018-12-01 06:48:19
Local clock offset: -0.078 ms
Remote clock offset: -0.074 ms


# Below is generated by plot.py at 2018-12-01 07:42:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1028.24 Mbit/s
95th percentile per-packet one-way delay: 170.497 ms
Loss rate: 1.75%
-- Flow 1:
Average throughput: 517.74 Mbit/s
95th percentile per-packet one-way delay: 180.042 ms
Loss rate: 2.10%
-- Flow 2:
Average throughput: 519.80 Mbit/s
95th percentile per-packet one-way delay: 161.419 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 499.05 Mbit/s
95th percentile per-packet one-way delay: 155.727 ms
Loss rate: 2.16%
```

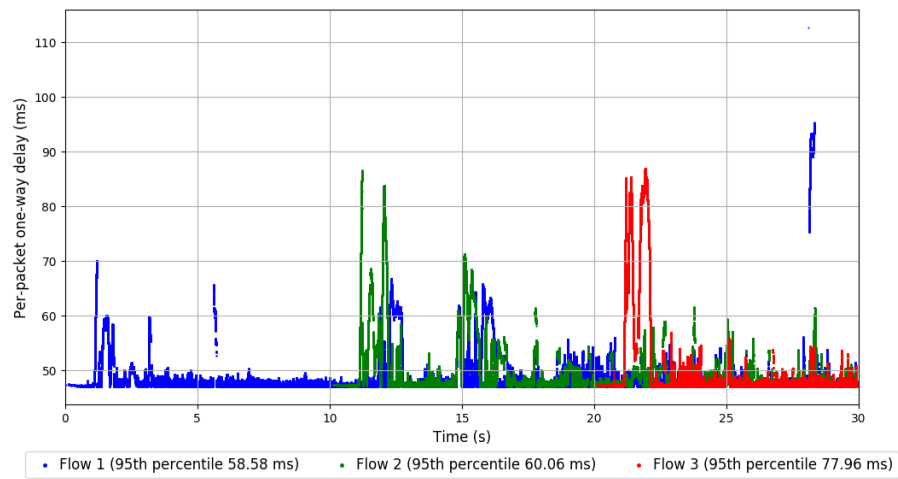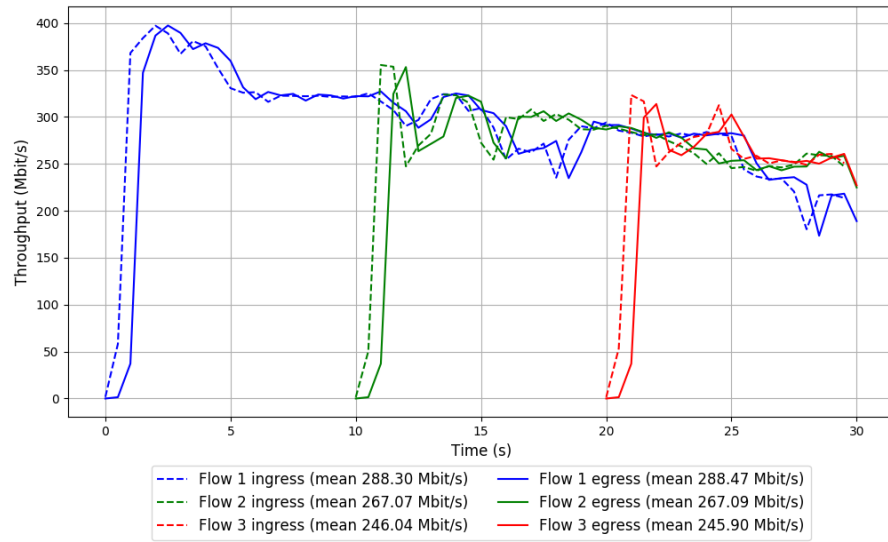Run 5: Report of TCP BBR — Data Link

```
Run 1: Statistics of Copa

Start at: 2018-12-01 04:38:45
End at: 2018-12-01 04:39:15
Local clock offset: -0.104 ms
Remote clock offset: -0.026 ms


# Below is generated by plot.py at 2018-12-01 07:42:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 547.36 Mbit/s
95th percentile per-packet one-way delay: 59.962 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 288.47 Mbit/s
95th percentile per-packet one-way delay: 58.580 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 267.09 Mbit/s
95th percentile per-packet one-way delay: 60.057 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 245.90 Mbit/s
95th percentile per-packet one-way delay: 77.961 ms
Loss rate: 1.00%
```

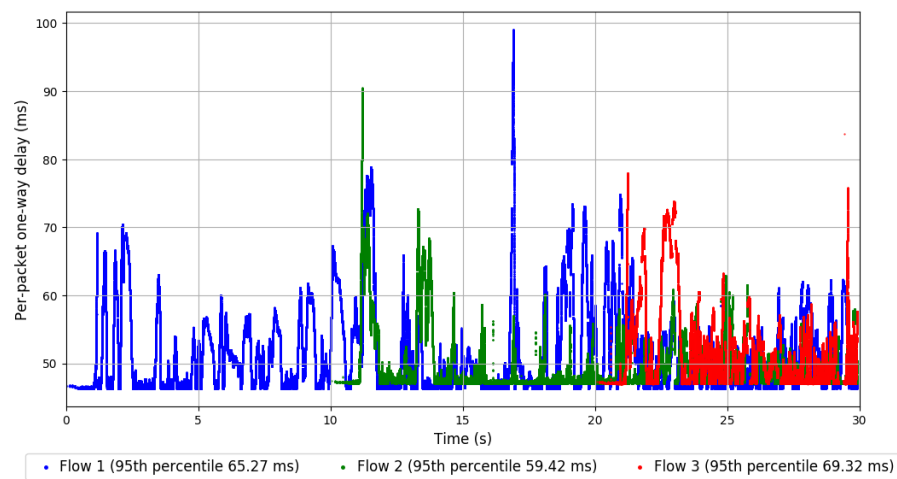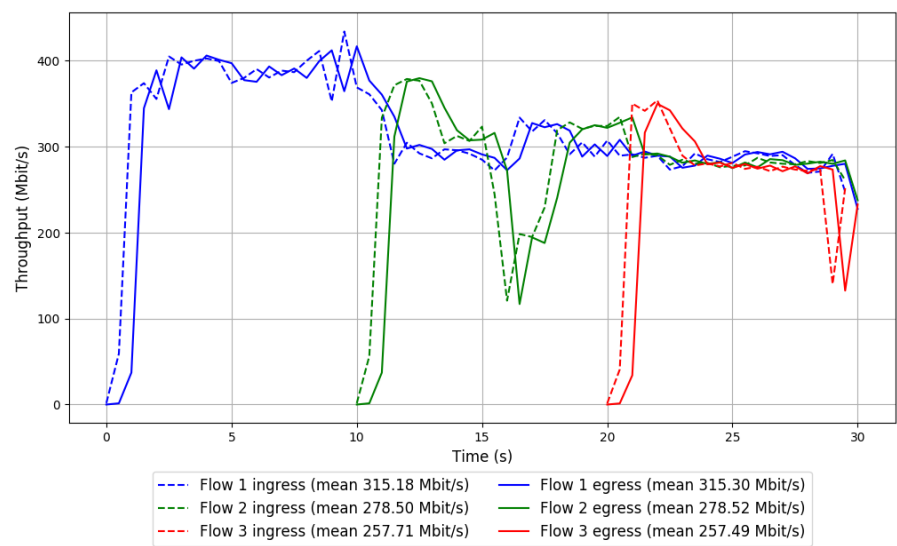Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2018-12-01 05:11:40
End at: 2018-12-01 05:12:10
Local clock offset: -0.149 ms
Remote clock offset: -0.075 ms


# Below is generated by plot.py at 2018-12-01 07:42:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 585.45 Mbit/s
95th percentile per-packet one-way delay: 65.212 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 315.30 Mbit/s
95th percentile per-packet one-way delay: 65.269 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 278.52 Mbit/s
95th percentile per-packet one-way delay: 59.422 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 257.49 Mbit/s
95th percentile per-packet one-way delay: 69.323 ms
Loss rate: 1.03%
```

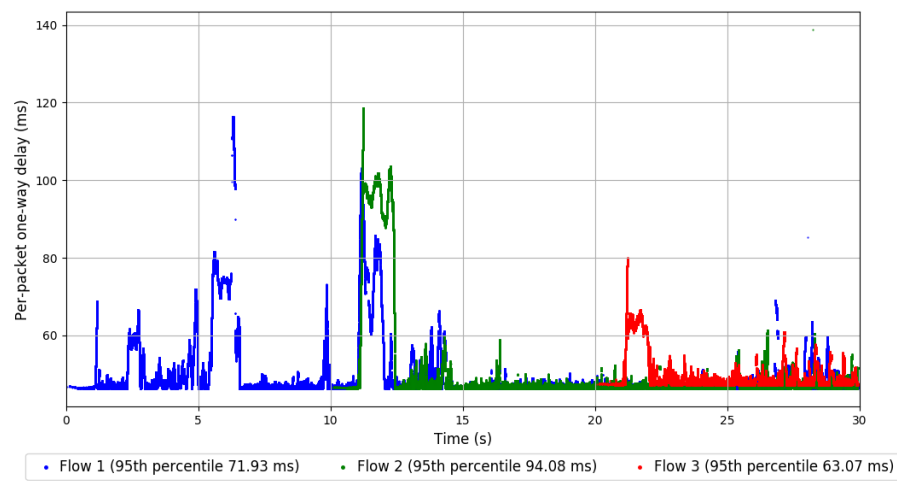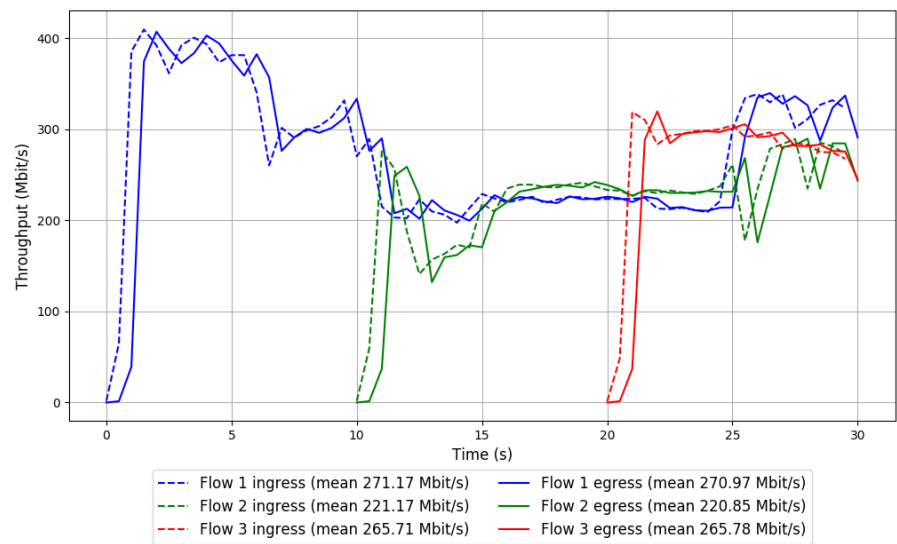Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-12-01 05:44:55
End at: 2018-12-01 05:45:25
Local clock offset: -0.181 ms
Remote clock offset: -0.032 ms


# Below is generated by plot.py at 2018-12-01 07:42:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 505.71 Mbit/s
95th percentile per-packet one-way delay: 71.209 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 270.97 Mbit/s
95th percentile per-packet one-way delay: 71.927 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 220.85 Mbit/s
95th percentile per-packet one-way delay: 94.078 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 265.78 Mbit/s
95th percentile per-packet one-way delay: 63.071 ms
Loss rate: 0.92%
```

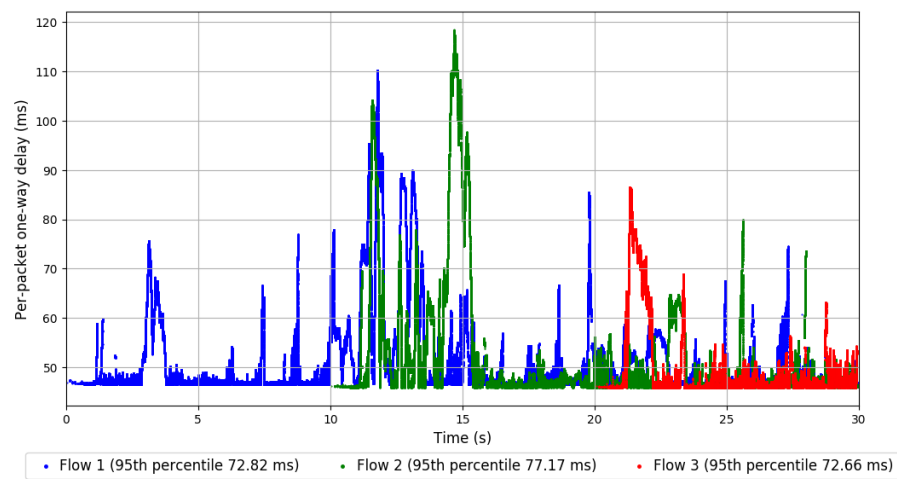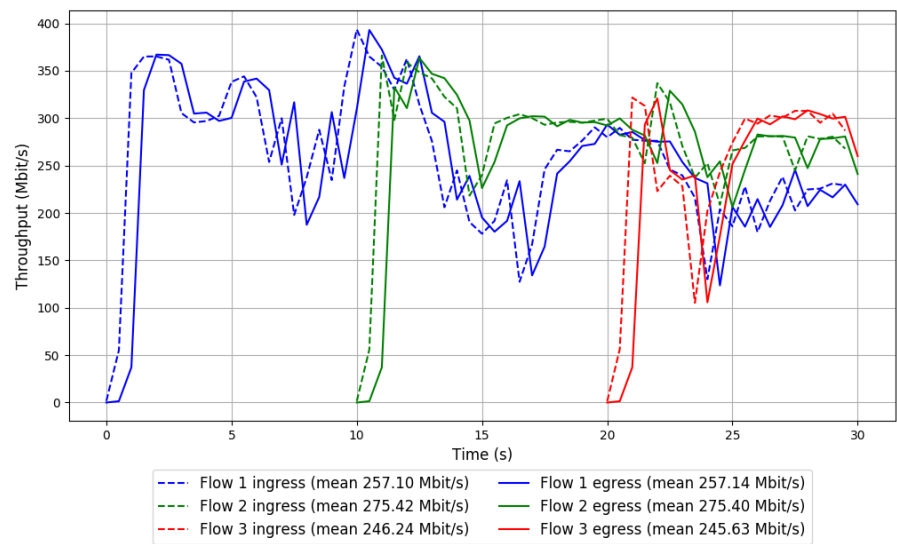Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2018-12-01 06:18:03
End at: 2018-12-01 06:18:33
Local clock offset: -0.536 ms
Remote clock offset: -0.089 ms


# Below is generated by plot.py at 2018-12-01 07:58:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 521.45 Mbit/s
95th percentile per-packet one-way delay: 73.542 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 257.14 Mbit/s
95th percentile per-packet one-way delay: 72.822 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 275.40 Mbit/s
95th percentile per-packet one-way delay: 77.175 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 245.63 Mbit/s
95th percentile per-packet one-way delay: 72.659 ms
Loss rate: 1.17%
```
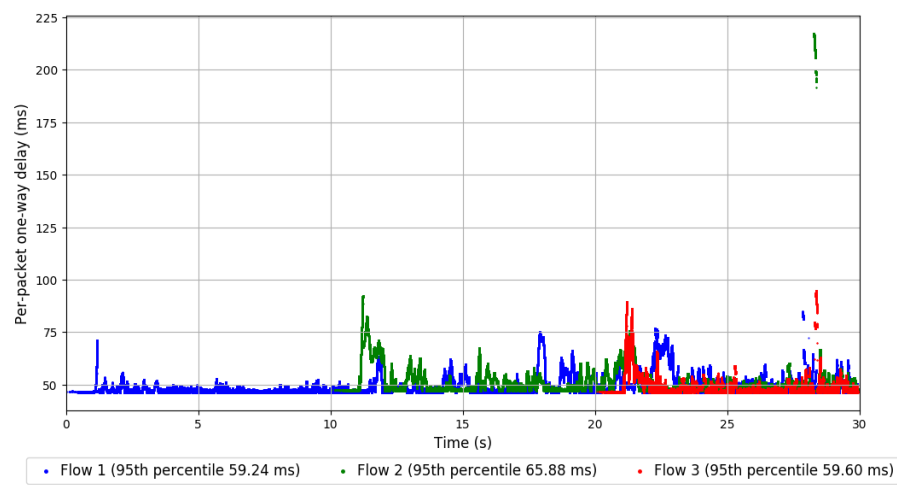
Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 257.10 Mbit/s) --- Flow 1 egress (mean 257.14 Mbit/s)
Flow 2 ingress (mean 275.42 Mbit/s) --- Flow 2 egress (mean 275.40 Mbit/s)
Flow 3 ingress (mean 246.24 Mbit/s) --- Flow 3 egress (mean 245.63 Mbit/s)

Flow 1 (95th percentile 72.82 ms)   Flow 2 (95th percentile 77.17 ms)   Flow 3 (95th percentile 72.66 ms)
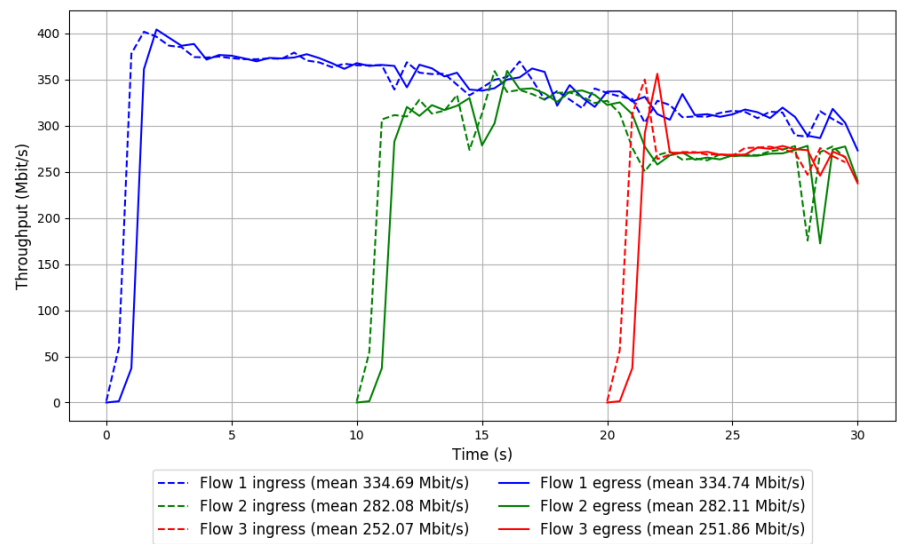
```
Run 5: Statistics of Copa

Start at: 2018-12-01 06:51:10
End at: 2018-12-01 06:51:40
Local clock offset: -0.067 ms
Remote clock offset: -0.081 ms


# Below is generated by plot.py at 2018-12-01 08:01:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 605.56 Mbit/s
95th percentile per-packet one-way delay: 62.241 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 334.74 Mbit/s
95th percentile per-packet one-way delay: 59.245 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 282.11 Mbit/s
95th percentile per-packet one-way delay: 65.877 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 251.86 Mbit/s
95th percentile per-packet one-way delay: 59.596 ms
Loss rate: 1.02%
```
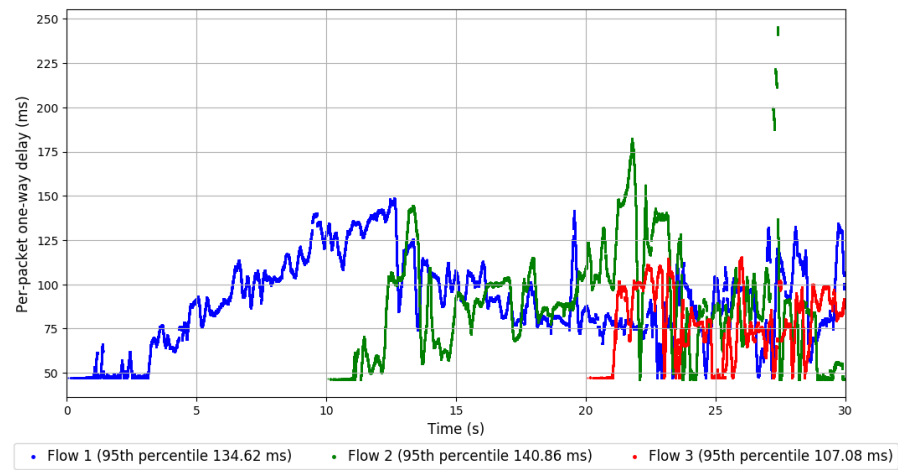
Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 334.69 Mbit/s) --- Flow 1 egress (mean 334.74 Mbit/s)
Flow 2 ingress (mean 282.08 Mbit/s) --- Flow 2 egress (mean 282.11 Mbit/s)
Flow 3 ingress (mean 252.07 Mbit/s) --- Flow 3 egress (mean 251.86 Mbit/s)

Flow 1 (95th percentile 59.24 ms)   Flow 2 (95th percentile 65.88 ms)   Flow 3 (95th percentile 59.60 ms)

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```
Run 1: Statistics of TCP Cubic

Start at: 2018-12-01 04:33:17
End at: 2018-12-01 04:33:47
Local clock offset: -0.085 ms
Remote clock offset: -0.01 ms


# Below is generated by plot.py at 2018-12-01 08:04:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1189.60 Mbit/s
95th percentile per-packet one-way delay: 135.011 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 642.92 Mbit/s
95th percentile per-packet one-way delay: 134.623 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 590.29 Mbit/s
95th percentile per-packet one-way delay: 140.864 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 466.56 Mbit/s
95th percentile per-packet one-way delay: 107.085 ms
Loss rate: 1.39%
```
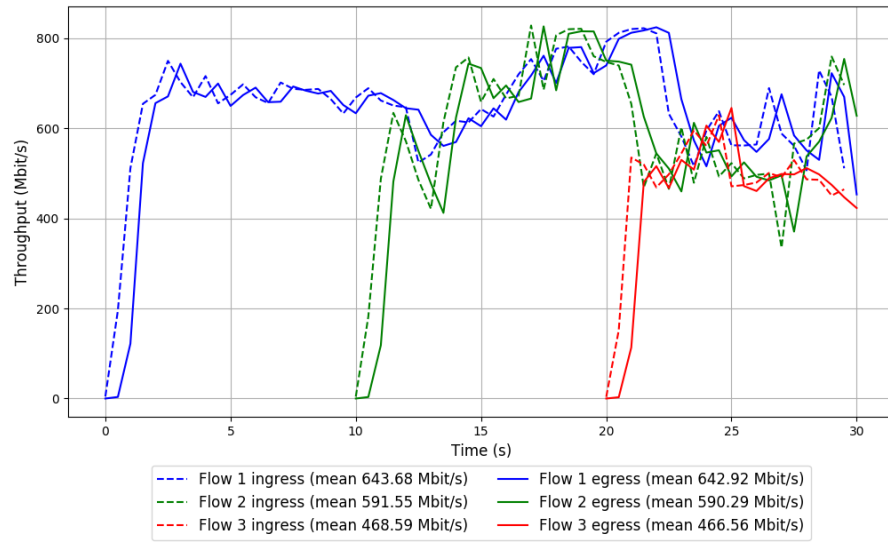
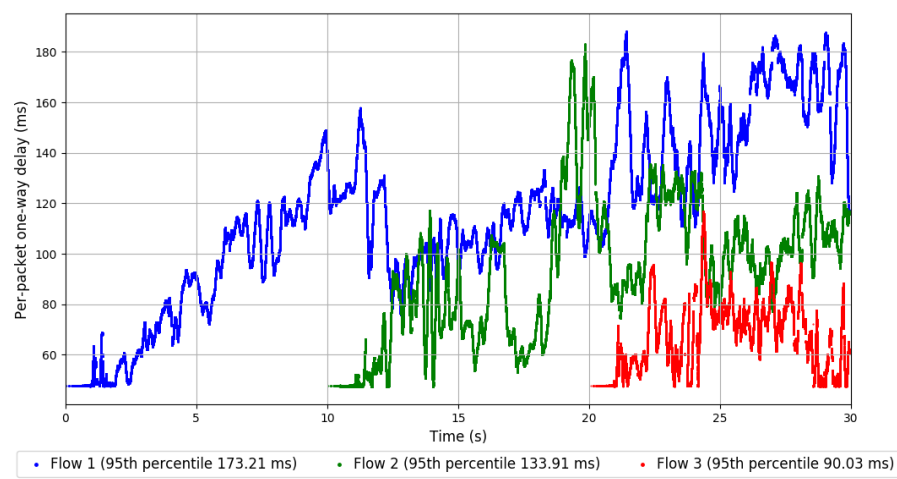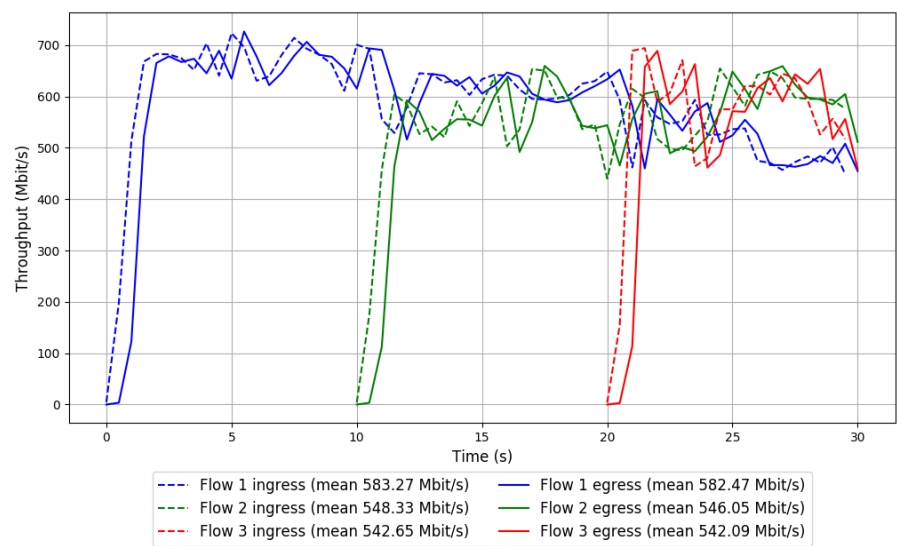Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-12-01 05:06:17
End at: 2018-12-01 05:06:47
Local clock offset: 0.206 ms
Remote clock offset: -0.086 ms


# Below is generated by plot.py at 2018-12-01 08:04:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1124.78 Mbit/s
95th percentile per-packet one-way delay: 165.771 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 582.47 Mbit/s
95th percentile per-packet one-way delay: 173.205 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 546.05 Mbit/s
95th percentile per-packet one-way delay: 133.907 ms
Loss rate: 0.89%
-- Flow 3:
Average throughput: 542.09 Mbit/s
95th percentile per-packet one-way delay: 90.031 ms
Loss rate: 1.06%
```

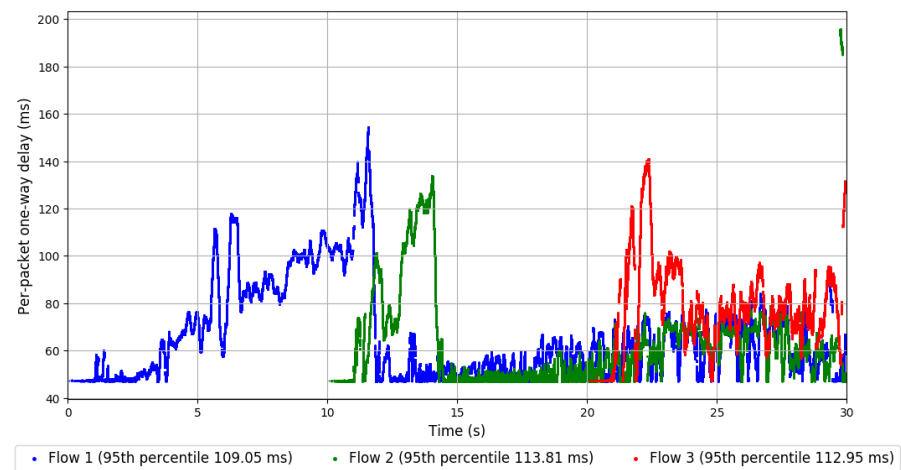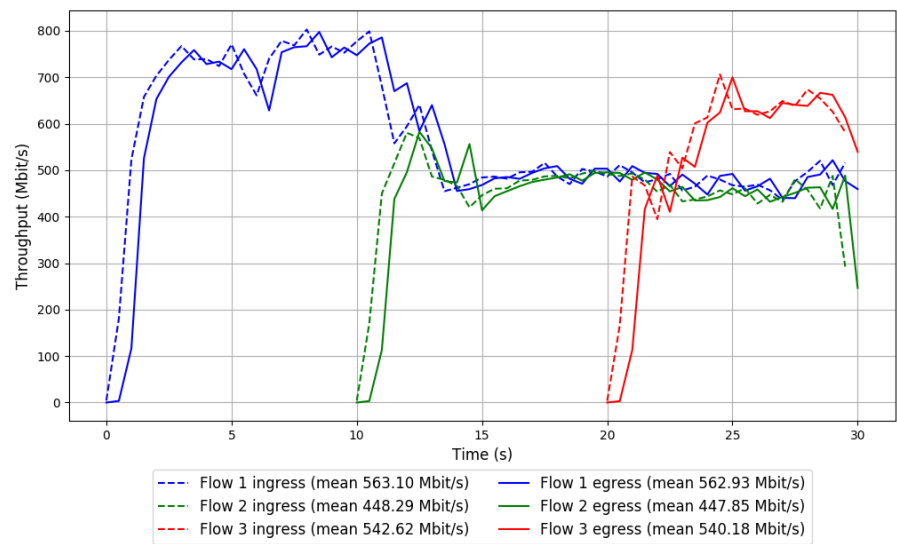Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 583.27 Mbit/s) --- Flow 1 egress (mean 582.47 Mbit/s)
Flow 2 ingress (mean 548.33 Mbit/s) --- Flow 2 egress (mean 546.05 Mbit/s)
Flow 3 ingress (mean 542.65 Mbit/s) --- Flow 3 egress (mean 542.09 Mbit/s)

Flow 1 (95th percentile 173.21 ms)   Flow 2 (95th percentile 133.91 ms)   Flow 3 (95th percentile 90.03 ms)

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```
Run 3: Statistics of TCP Cubic

Start at: 2018-12-01 05:39:32
End at: 2018-12-01 05:40:02
Local clock offset: -0.143 ms
Remote clock offset: -0.019 ms


# Below is generated by plot.py at 2018-12-01 08:04:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1039.22 Mbit/s
95th percentile per-packet one-way delay: 110.072 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 562.93 Mbit/s
95th percentile per-packet one-way delay: 109.046 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 447.85 Mbit/s
95th percentile per-packet one-way delay: 113.811 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 540.18 Mbit/s
95th percentile per-packet one-way delay: 112.947 ms
Loss rate: 1.39%
```

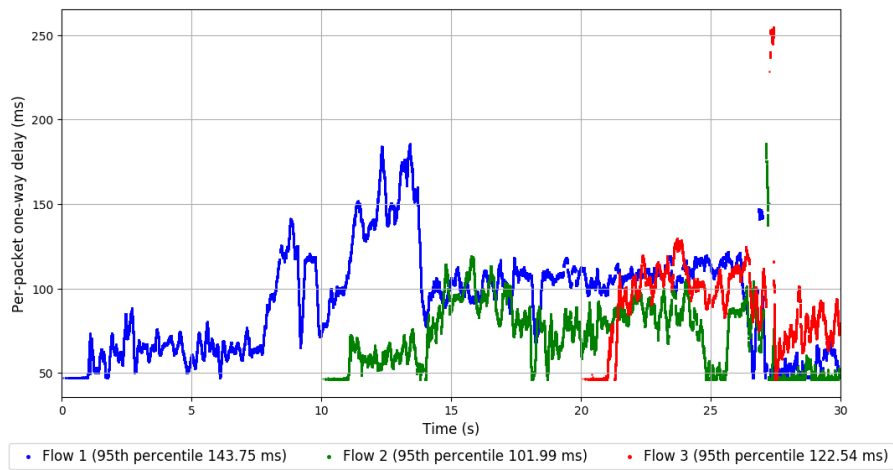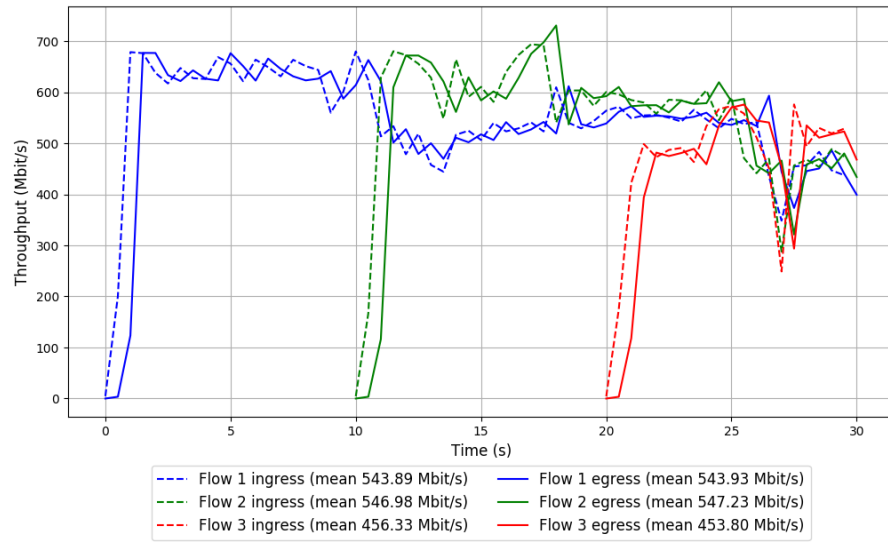## Run 3: Report of TCP Cubic — Data Link

Legend:
- Flow 1 ingress (mean 563.10 Mbit/s)
- Flow 1 egress (mean 562.93 Mbit/s)
- Flow 2 ingress (mean 448.29 Mbit/s)
- Flow 2 egress (mean 447.85 Mbit/s)
- Flow 3 ingress (mean 542.62 Mbit/s)
- Flow 3 egress (mean 540.18 Mbit/s)

Legend:
- Flow 1 (95th percentile 109.05 ms)
- Flow 2 (95th percentile 113.81 ms)
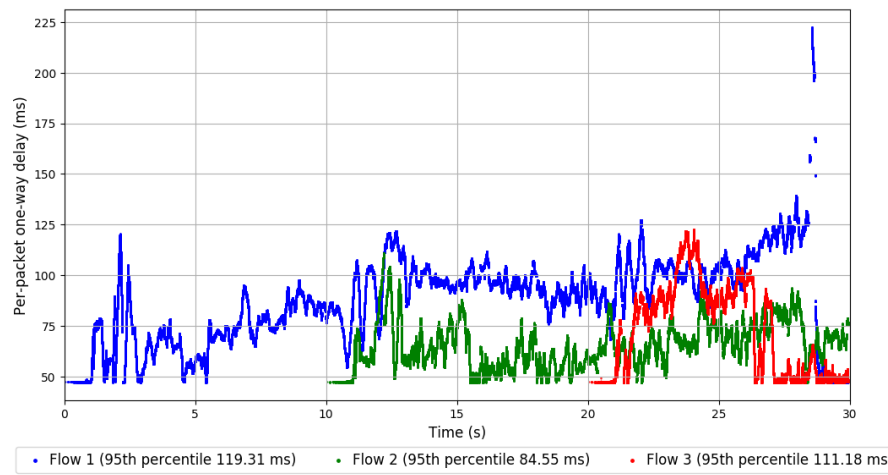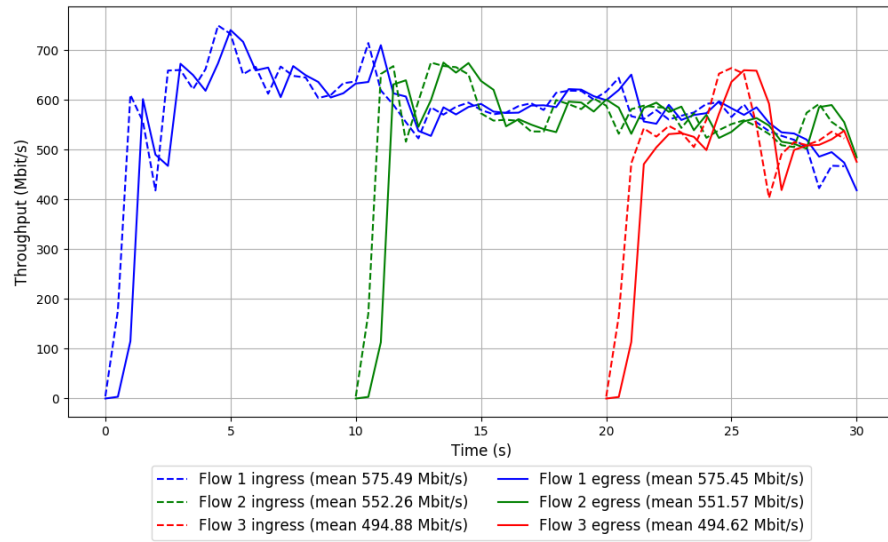- Flow 3 (95th percentile 112.95 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-12-01 06:12:37
End at: 2018-12-01 06:13:07
Local clock offset: -0.147 ms
Remote clock offset: -0.078 ms


# Below is generated by plot.py at 2018-12-01 08:04:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1058.09 Mbit/s
95th percentile per-packet one-way delay: 128.369 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 543.93 Mbit/s
95th percentile per-packet one-way delay: 143.748 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 547.23 Mbit/s
95th percentile per-packet one-way delay: 101.993 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 453.80 Mbit/s
95th percentile per-packet one-way delay: 122.537 ms
Loss rate: 1.48%
```

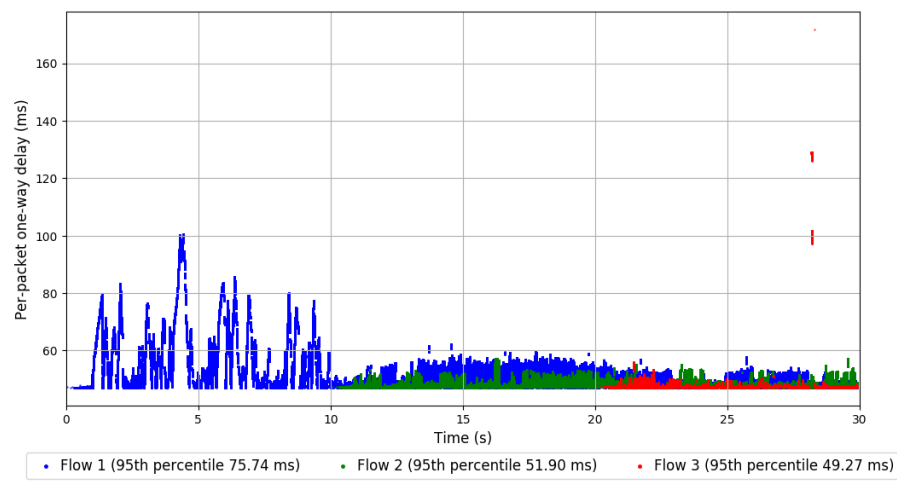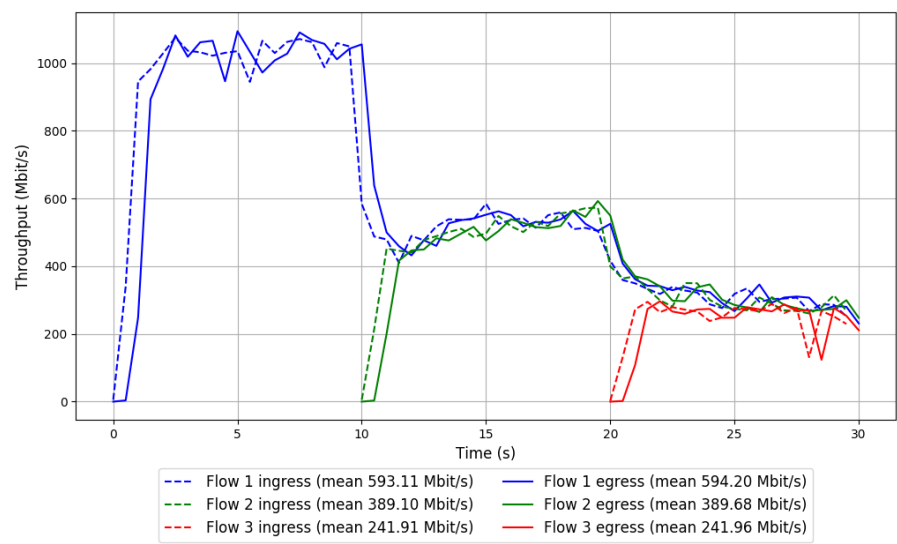# Run 4: Report of TCP Cubic — Data Link

- Flow 1 ingress (mean 543.89 Mbit/s)
- Flow 1 egress (mean 543.93 Mbit/s)
- Flow 2 ingress (mean 546.98 Mbit/s)
- Flow 2 egress (mean 547.23 Mbit/s)
- Flow 3 ingress (mean 456.33 Mbit/s)
- Flow 3 egress (mean 453.80 Mbit/s)

- Flow 1 (95th percentile 143.75 ms)
- Flow 2 (95th percentile 101.99 ms)
- Flow 3 (95th percentile 122.54 ms)

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```
Run 5: Statistics of TCP Cubic

Start at: 2018-12-01 06:45:41
End at: 2018-12-01 06:46:11
Local clock offset: -0.04 ms
Remote clock offset: -0.097 ms


# Below is generated by plot.py at 2018-12-01 08:04:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1105.75 Mbit/s
95th percentile per-packet one-way delay: 113.802 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 575.45 Mbit/s
95th percentile per-packet one-way delay: 119.307 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 551.57 Mbit/s
95th percentile per-packet one-way delay: 84.549 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 494.62 Mbit/s
95th percentile per-packet one-way delay: 111.184 ms
Loss rate: 1.01%
```

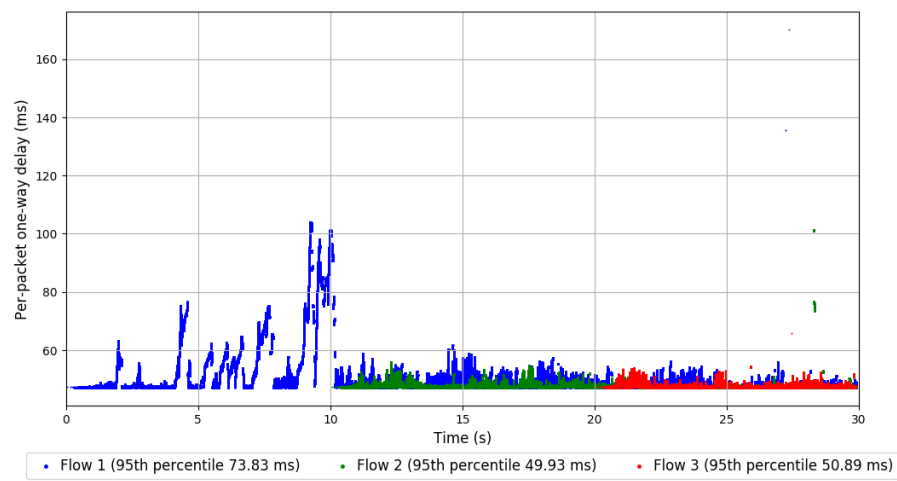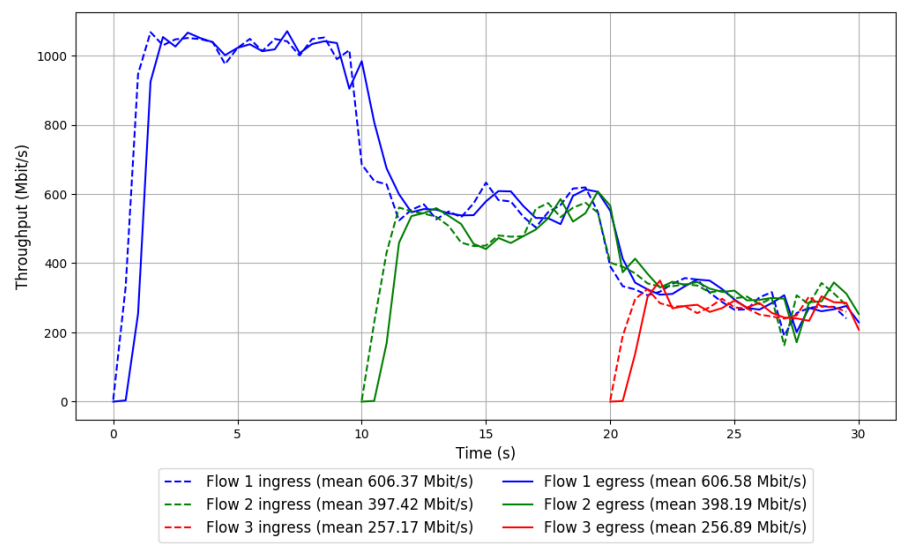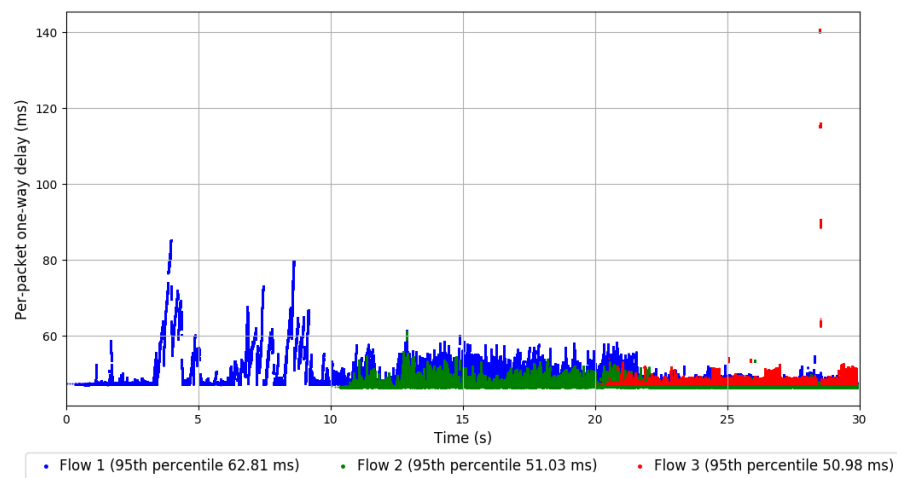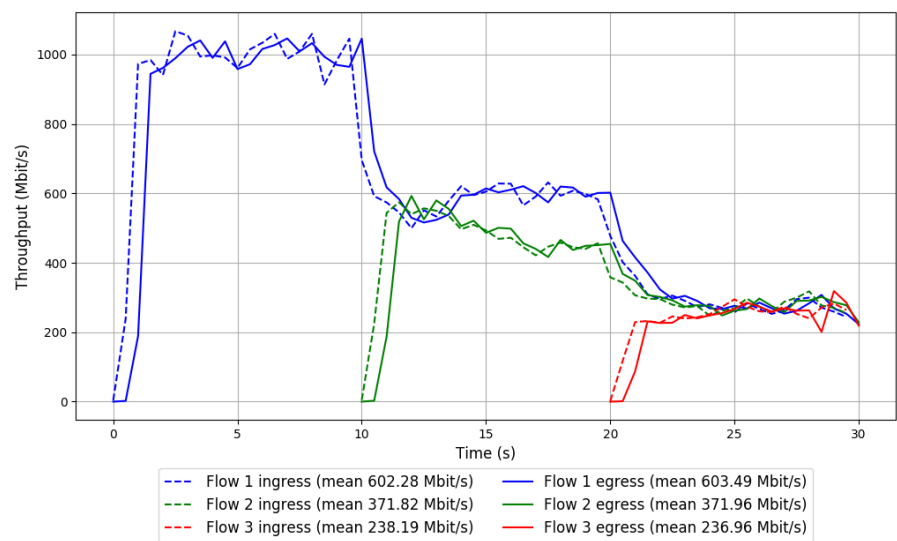Run 5: Report of TCP Cubic — Data Link

```
Run 1: Statistics of FillP

Start at: 2018-12-01 04:50:32
End at: 2018-12-01 04:51:02
Local clock offset: -0.108 ms
Remote clock offset: -0.065 ms


# Below is generated by plot.py at 2018-12-01 08:04:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 932.61 Mbit/s
95th percentile per-packet one-way delay: 71.327 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 594.20 Mbit/s
95th percentile per-packet one-way delay: 75.737 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 389.68 Mbit/s
95th percentile per-packet one-way delay: 51.895 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 241.96 Mbit/s
95th percentile per-packet one-way delay: 49.274 ms
Loss rate: 0.79%
```

Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 593.11 Mbit/s)   Flow 1 egress (mean 594.20 Mbit/s)
Flow 2 ingress (mean 389.10 Mbit/s)   Flow 2 egress (mean 389.68 Mbit/s)
Flow 3 ingress (mean 241.91 Mbit/s)   Flow 3 egress (mean 241.96 Mbit/s)

Flow 1 (95th percentile 75.74 ms)   Flow 2 (95th percentile 51.90 ms)   Flow 3 (95th percentile 49.27 ms)
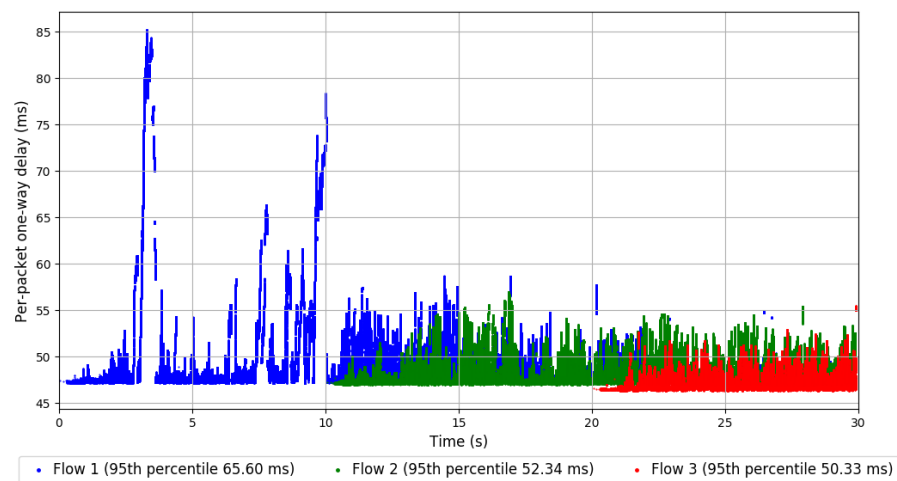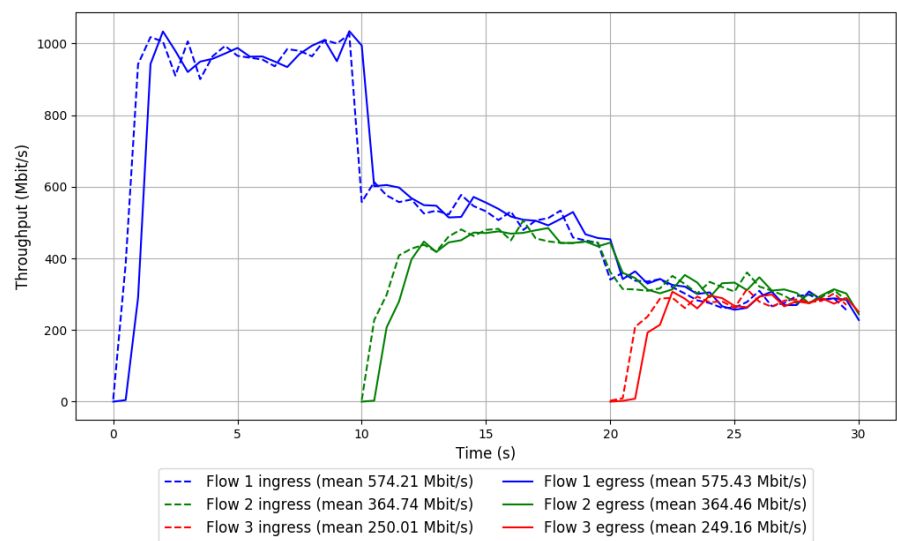
```
Run 2: Statistics of FillP

Start at: 2018-12-01 05:23:30
End at: 2018-12-01 05:24:00
Local clock offset: -0.128 ms
Remote clock offset: -0.075 ms

# Below is generated by plot.py at 2018-12-01 08:20:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 955.71 Mbit/s
95th percentile per-packet one-way delay: 68.198 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 606.58 Mbit/s
95th percentile per-packet one-way delay: 73.830 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 398.19 Mbit/s
95th percentile per-packet one-way delay: 49.930 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 256.89 Mbit/s
95th percentile per-packet one-way delay: 50.893 ms
Loss rate: 1.20%
```

Run 2: Report of FillP — Data Link

Flow 1 ingress (mean 606.37 Mbit/s) --- Flow 1 egress (mean 606.58 Mbit/s)
Flow 2 ingress (mean 397.42 Mbit/s) --- Flow 2 egress (mean 398.19 Mbit/s)
Flow 3 ingress (mean 257.17 Mbit/s) --- Flow 3 egress (mean 256.89 Mbit/s)

Flow 1 (95th percentile 73.83 ms)   Flow 2 (95th percentile 49.93 ms)   Flow 3 (95th percentile 50.89 ms)

```
Run 3: Statistics of FillP

Start at: 2018-12-01 05:56:40
End at: 2018-12-01 05:57:10
Local clock offset: -0.188 ms
Remote clock offset: -0.026 ms


# Below is generated by plot.py at 2018-12-01 08:23:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 928.65 Mbit/s
95th percentile per-packet one-way delay: 59.896 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 603.49 Mbit/s
95th percentile per-packet one-way delay: 62.808 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 371.96 Mbit/s
95th percentile per-packet one-way delay: 51.030 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 236.96 Mbit/s
95th percentile per-packet one-way delay: 50.978 ms
Loss rate: 1.35%
```
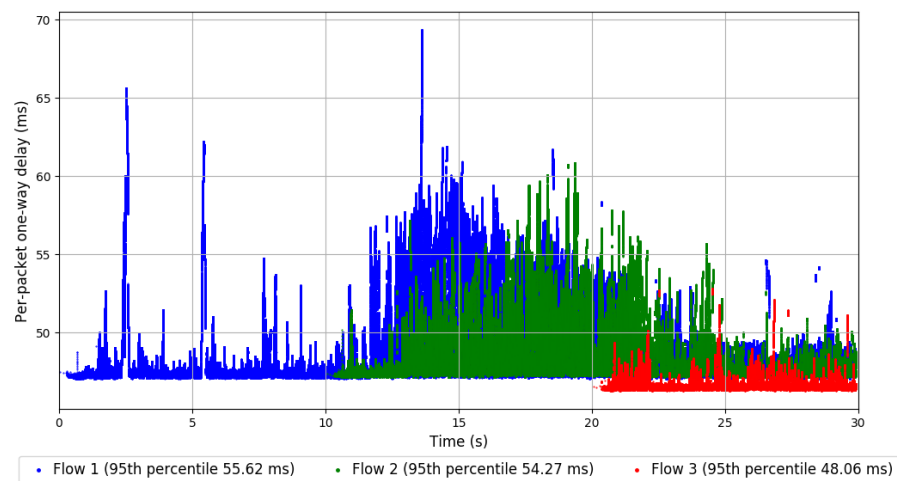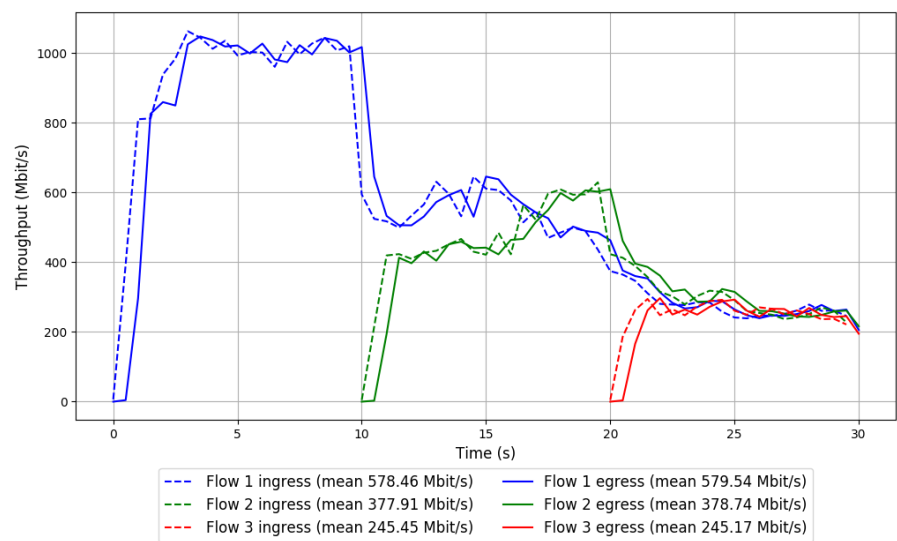
Run 3: Report of FillP — Data Link

Flow 1 ingress (mean 602.28 Mbit/s) --- Flow 1 egress (mean 603.49 Mbit/s)
Flow 2 ingress (mean 371.82 Mbit/s) --- Flow 2 egress (mean 371.96 Mbit/s)
Flow 3 ingress (mean 238.19 Mbit/s) --- Flow 3 egress (mean 236.96 Mbit/s)

Flow 1 (95th percentile 62.81 ms) • Flow 2 (95th percentile 51.03 ms) • Flow 3 (95th percentile 50.98 ms)

```
Run 4: Statistics of FillP

Start at: 2018-12-01 06:29:50
End at: 2018-12-01 06:30:20
Local clock offset: -0.096 ms
Remote clock offset: -0.078 ms


# Below is generated by plot.py at 2018-12-01 08:23:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 899.50 Mbit/s
95th percentile per-packet one-way delay: 58.191 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 575.43 Mbit/s
95th percentile per-packet one-way delay: 65.600 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 364.46 Mbit/s
95th percentile per-packet one-way delay: 52.340 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 249.16 Mbit/s
95th percentile per-packet one-way delay: 50.334 ms
Loss rate: 1.23%
```
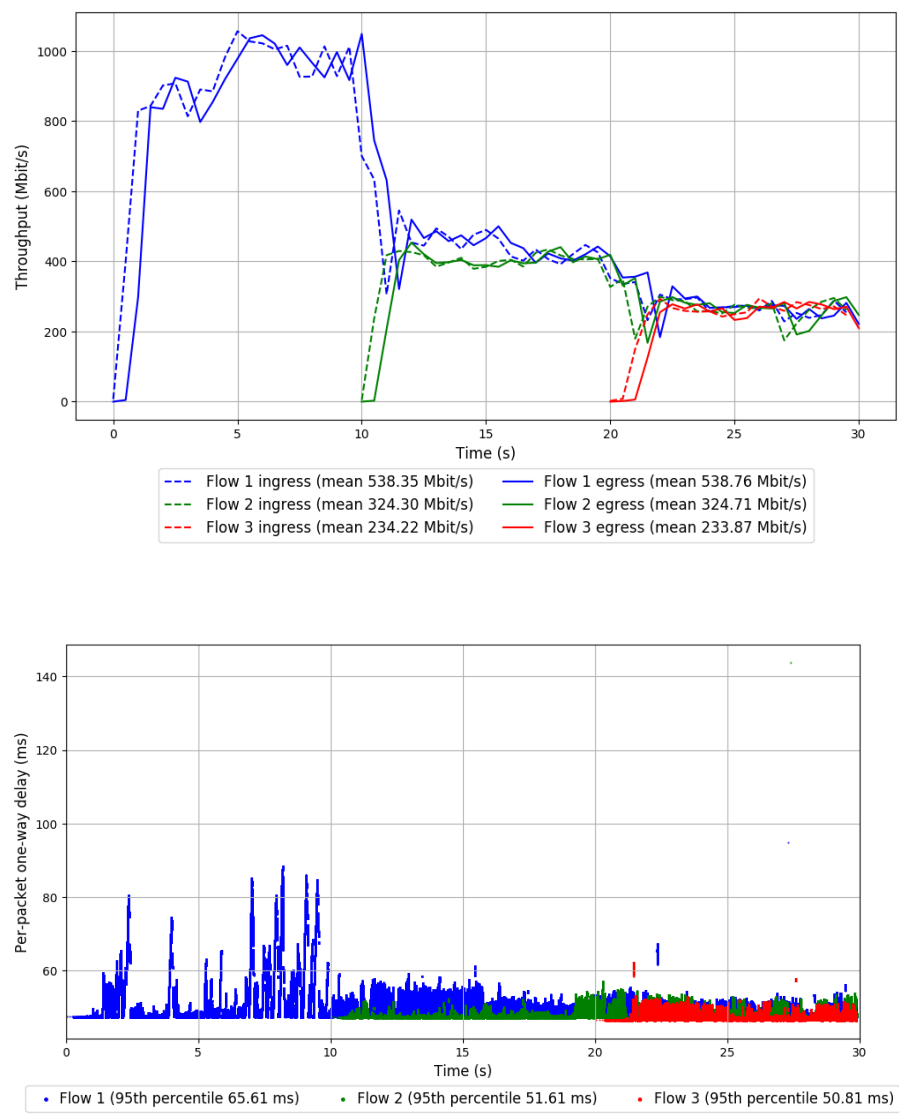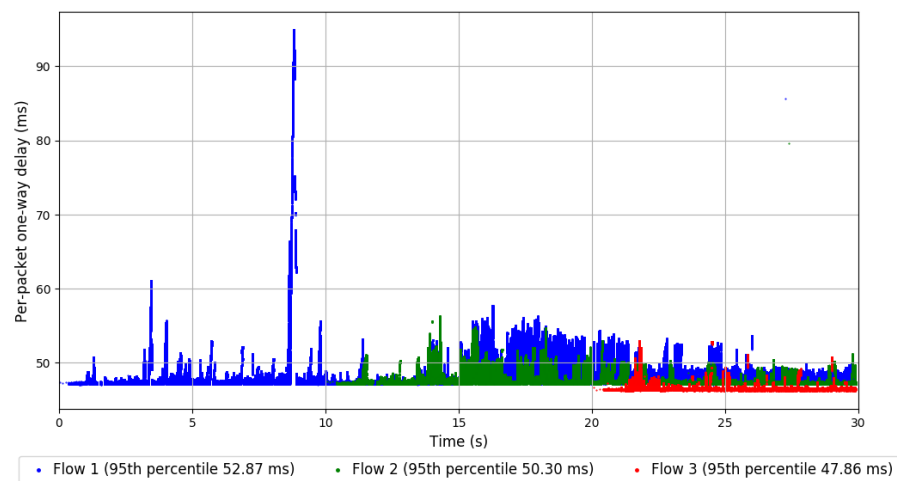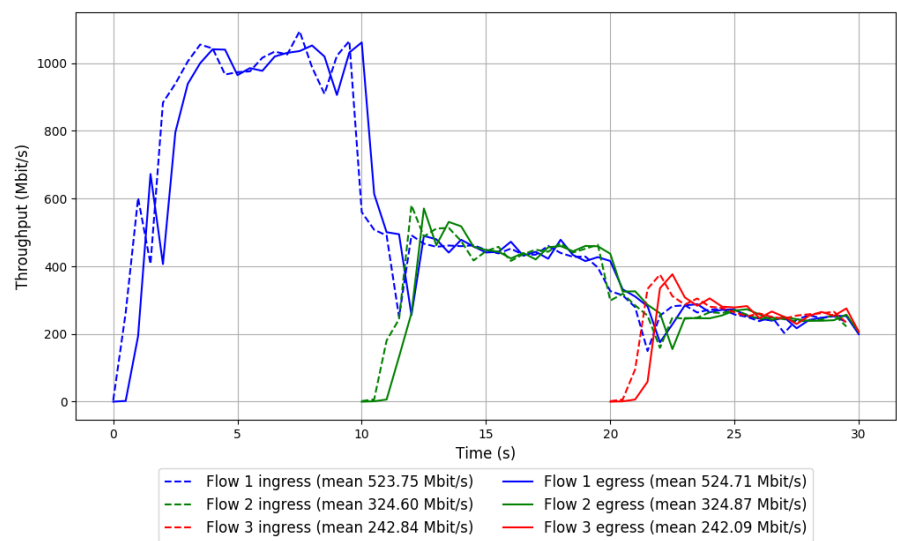
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2018-12-01 07:03:03
End at: 2018-12-01 07:03:33
Local clock offset: -0.074 ms
Remote clock offset: -0.1 ms

# Below is generated by plot.py at 2018-12-01 08:23:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 911.76 Mbit/s
95th percentile per-packet one-way delay: 55.036 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 579.54 Mbit/s
95th percentile per-packet one-way delay: 55.624 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 378.74 Mbit/s
95th percentile per-packet one-way delay: 54.268 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 245.17 Mbit/s
95th percentile per-packet one-way delay: 48.064 ms
Loss rate: 0.90%
```

Run 5: Report of FillP — Data Link

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```
Run 1: Statistics of FillP-Sheep

Start at: 2018-12-01 04:42:24
End at: 2018-12-01 04:42:55
Local clock offset: -0.083 ms
Remote clock offset: -0.026 ms


# Below is generated by plot.py at 2018-12-01 08:23:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 831.65 Mbit/s
95th percentile per-packet one-way delay: 61.676 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 538.76 Mbit/s
95th percentile per-packet one-way delay: 65.611 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 324.71 Mbit/s
95th percentile per-packet one-way delay: 51.608 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 233.87 Mbit/s
95th percentile per-packet one-way delay: 50.811 ms
Loss rate: 1.24%
```
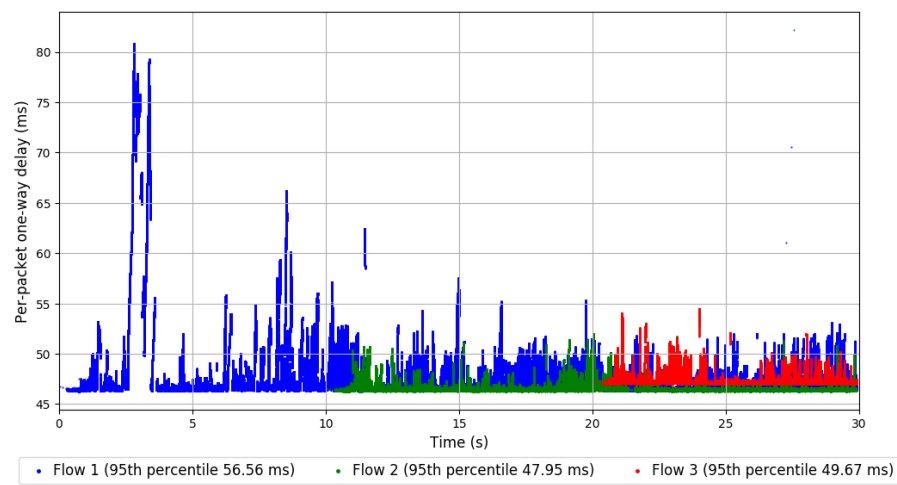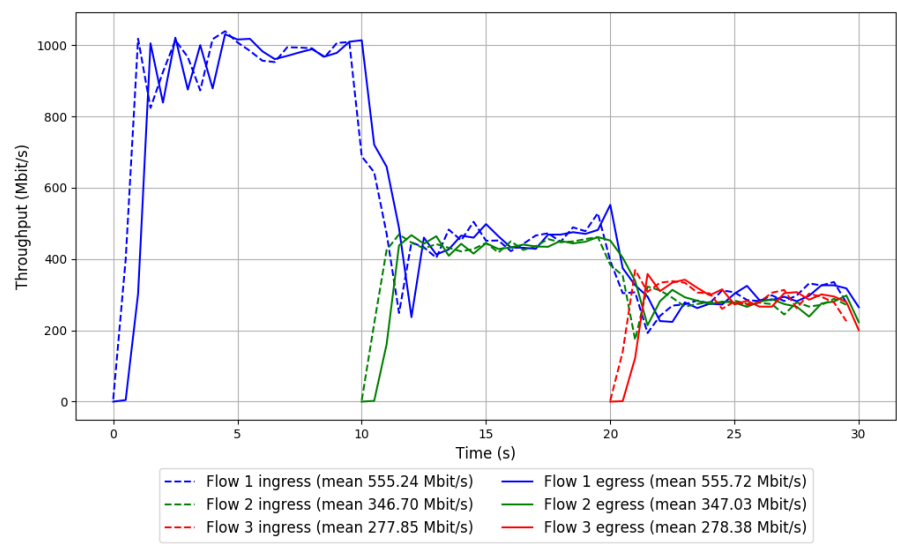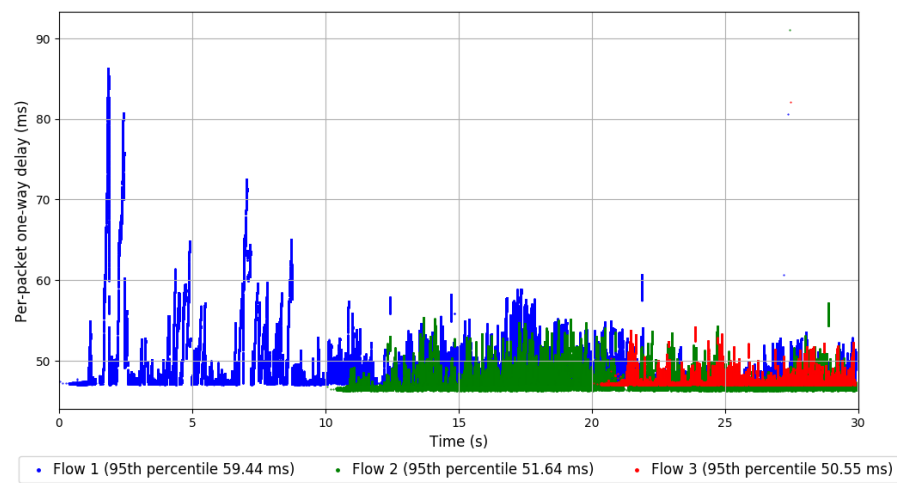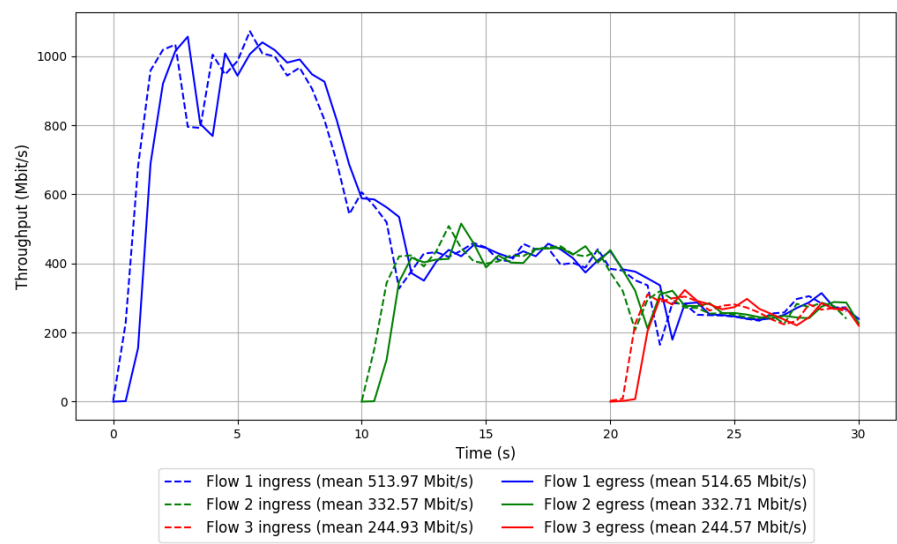
Run 1: Report of FillP-Sheep — Data Link

```
Run 2: Statistics of FillP-Sheep

Start at: 2018-12-01 05:15:24
End at: 2018-12-01 05:15:54
Local clock offset: -0.142 ms
Remote clock offset: -0.082 ms


# Below is generated by plot.py at 2018-12-01 08:23:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 820.26 Mbit/s
95th percentile per-packet one-way delay: 52.162 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 524.71 Mbit/s
95th percentile per-packet one-way delay: 52.873 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 324.87 Mbit/s
95th percentile per-packet one-way delay: 50.299 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 242.09 Mbit/s
95th percentile per-packet one-way delay: 47.857 ms
Loss rate: 1.14%
```

Run 2: Report of FillP-Sheep — Data Link

```
Run 3: Statistics of FillP-Sheep

Start at: 2018-12-01 05:48:39
End at: 2018-12-01 05:49:09
Local clock offset: -0.18 ms
Remote clock offset: 0.006 ms


# Below is generated by plot.py at 2018-12-01 08:24:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 877.73 Mbit/s
95th percentile per-packet one-way delay: 53.141 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 555.72 Mbit/s
95th percentile per-packet one-way delay: 56.560 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 347.03 Mbit/s
95th percentile per-packet one-way delay: 47.948 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 278.38 Mbit/s
95th percentile per-packet one-way delay: 49.674 ms
Loss rate: 0.83%
```
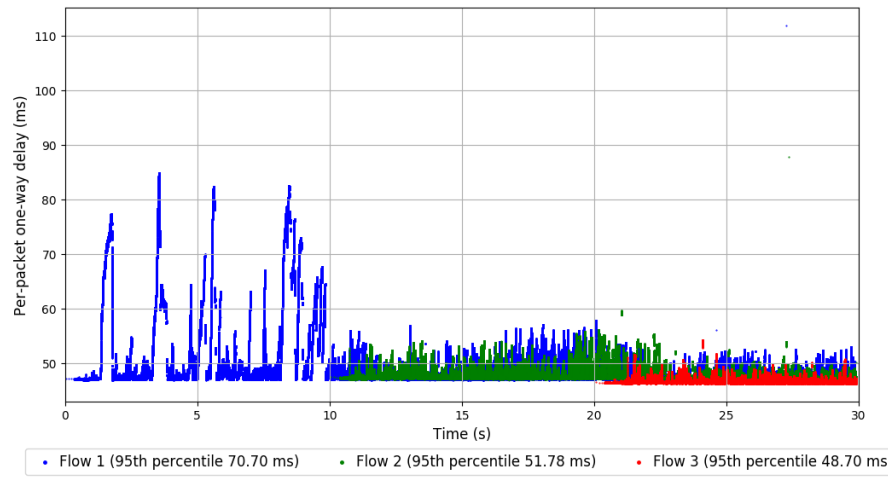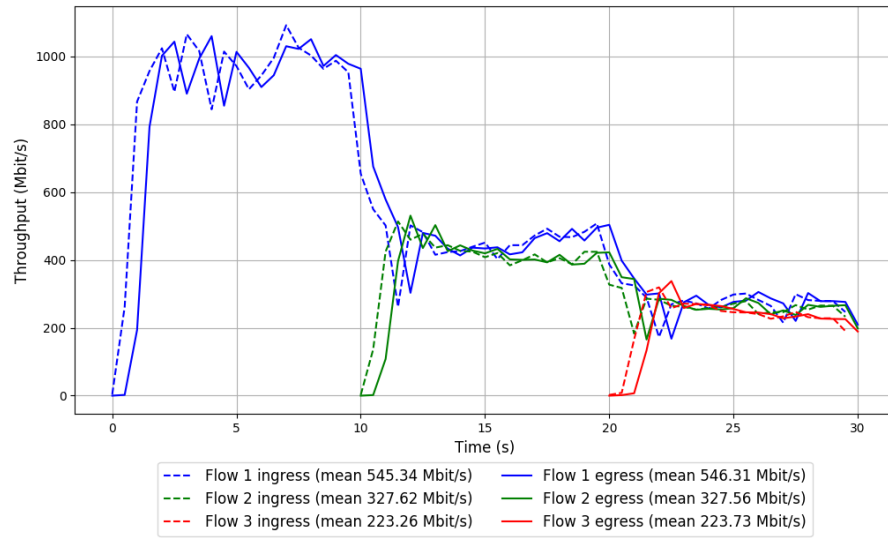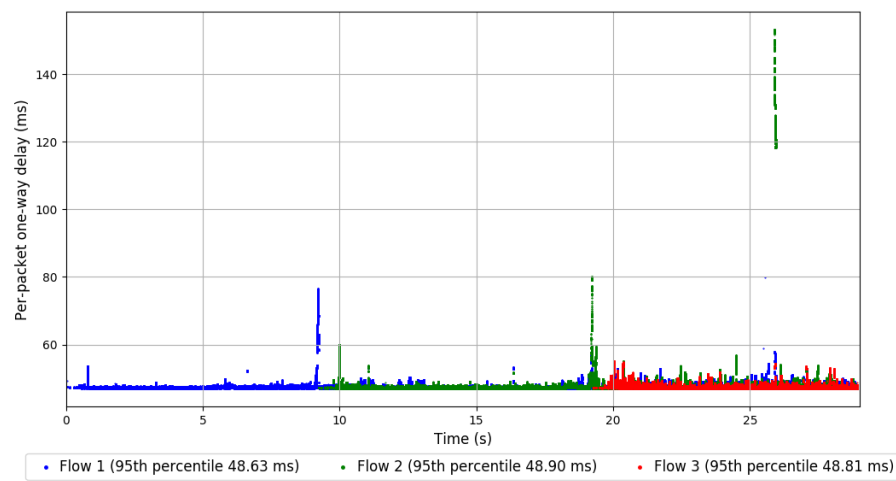
Run 3: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 555.24 Mbit/s) --- Flow 1 egress (mean 555.72 Mbit/s)
Flow 2 ingress (mean 346.70 Mbit/s) --- Flow 2 egress (mean 347.03 Mbit/s)
Flow 3 ingress (mean 277.85 Mbit/s) --- Flow 3 egress (mean 278.38 Mbit/s)

Flow 1 (95th percentile 56.56 ms)   Flow 2 (95th percentile 47.95 ms)   Flow 3 (95th percentile 49.67 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2018-12-01 06:21:41
End at: 2018-12-01 06:22:11
Local clock offset: -0.105 ms
Remote clock offset: -0.066 ms


# Below is generated by plot.py at 2018-12-01 08:24:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 815.72 Mbit/s
95th percentile per-packet one-way delay: 56.793 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 514.65 Mbit/s
95th percentile per-packet one-way delay: 59.444 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 332.71 Mbit/s
95th percentile per-packet one-way delay: 51.642 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 244.57 Mbit/s
95th percentile per-packet one-way delay: 50.555 ms
Loss rate: 1.24%
```

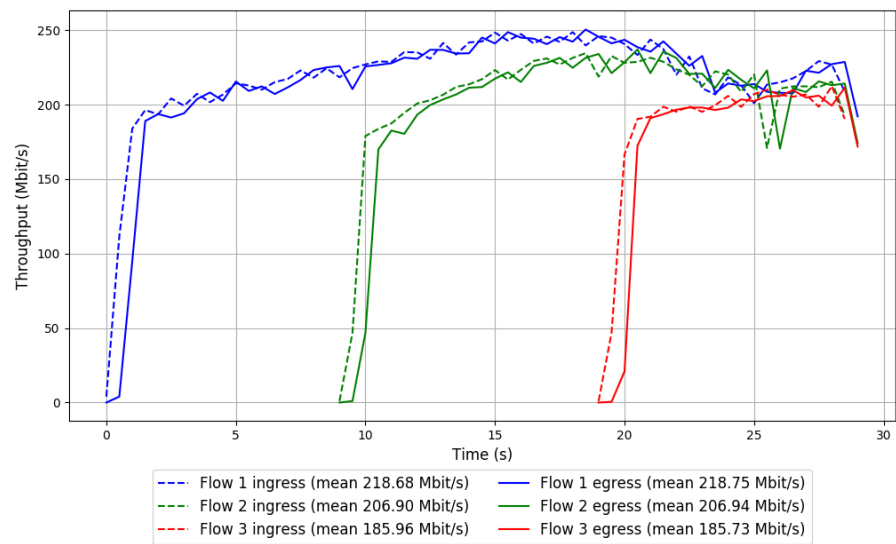Run 4: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 513.97 Mbit/s) --- Flow 1 egress (mean 514.65 Mbit/s)
Flow 2 ingress (mean 332.57 Mbit/s) --- Flow 2 egress (mean 332.71 Mbit/s)
Flow 3 ingress (mean 244.93 Mbit/s) --- Flow 3 egress (mean 244.57 Mbit/s)

Flow 1 (95th percentile 59.44 ms)   Flow 2 (95th percentile 51.64 ms)   Flow 3 (95th percentile 50.55 ms)
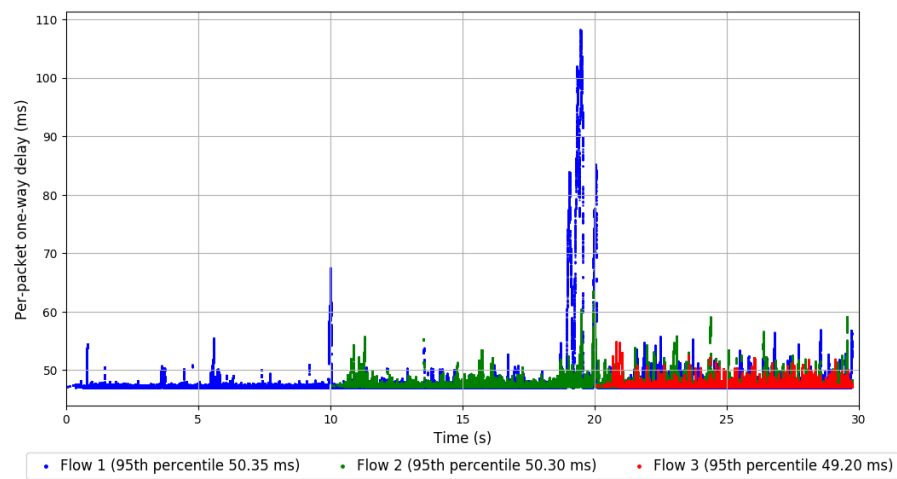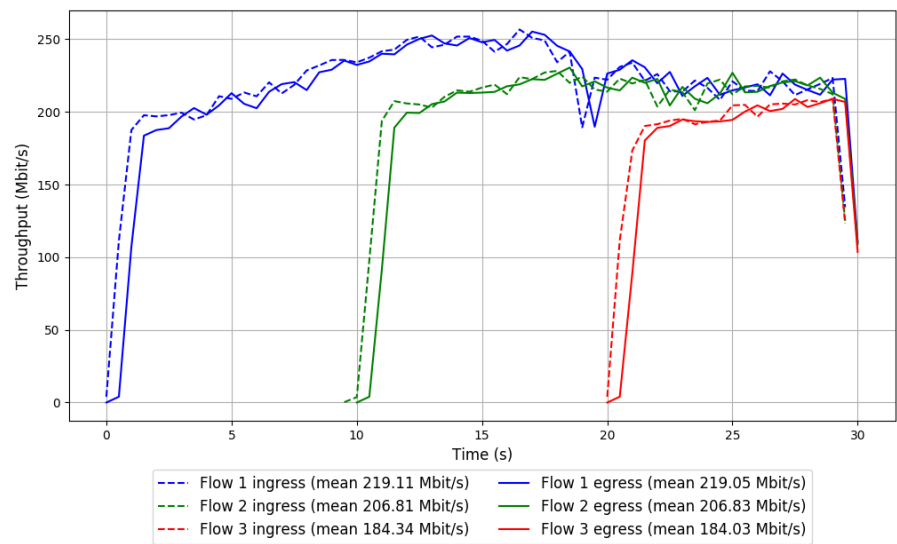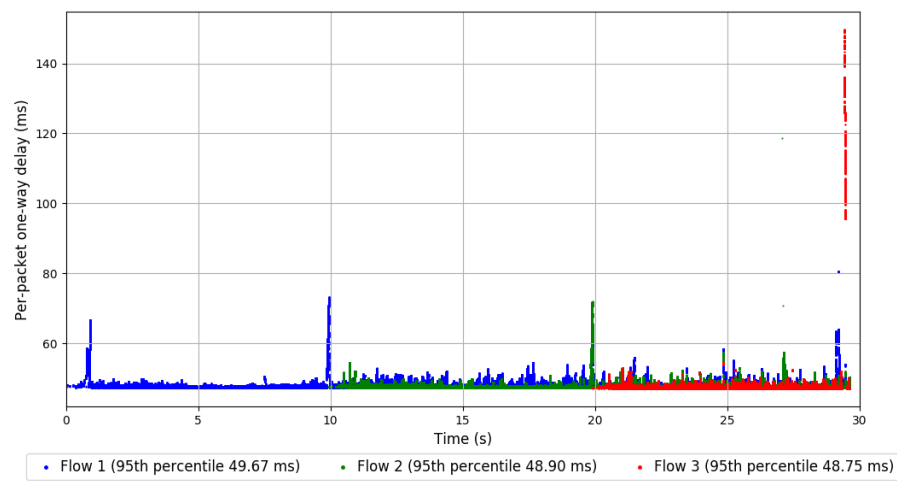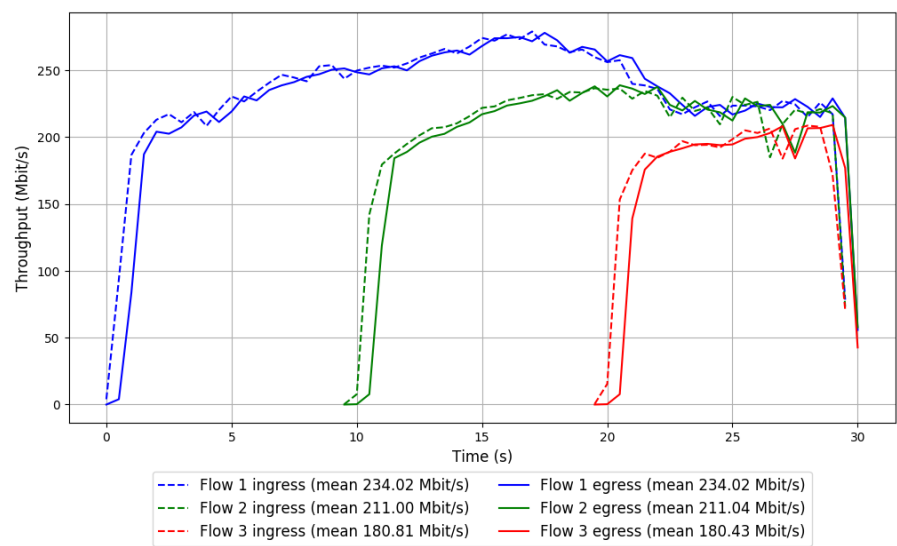
```
Run 5: Statistics of FillP-Sheep

Start at: 2018-12-01 06:54:57
End at: 2018-12-01 06:55:27
Local clock offset: -0.034 ms
Remote clock offset: -0.09 ms


# Below is generated by plot.py at 2018-12-01 08:40:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 837.44 Mbit/s
95th percentile per-packet one-way delay: 65.545 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 546.31 Mbit/s
95th percentile per-packet one-way delay: 70.700 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 327.56 Mbit/s
95th percentile per-packet one-way delay: 51.781 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 223.73 Mbit/s
95th percentile per-packet one-way delay: 48.701 ms
Loss rate: 0.77%
```

Run 5: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 545.34 Mbit/s)   Flow 1 egress (mean 546.31 Mbit/s)
Flow 2 ingress (mean 327.62 Mbit/s)   Flow 2 egress (mean 327.56 Mbit/s)
Flow 3 ingress (mean 223.26 Mbit/s)   Flow 3 egress (mean 223.73 Mbit/s)

Flow 1 (95th percentile 70.70 ms)   Flow 2 (95th percentile 51.78 ms)   Flow 3 (95th percentile 48.70 ms)

```
Run 1: Statistics of Indigo

Start at: 2018-12-01 04:44:10
End at: 2018-12-01 04:44:40
Local clock offset: -0.115 ms
Remote clock offset: -0.016 ms


# Below is generated by plot.py at 2018-12-01 08:40:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 421.91 Mbit/s
95th percentile per-packet one-way delay: 48.738 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 218.75 Mbit/s
95th percentile per-packet one-way delay: 48.635 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 206.94 Mbit/s
95th percentile per-packet one-way delay: 48.896 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 185.73 Mbit/s
95th percentile per-packet one-way delay: 48.812 ms
Loss rate: 1.10%
```
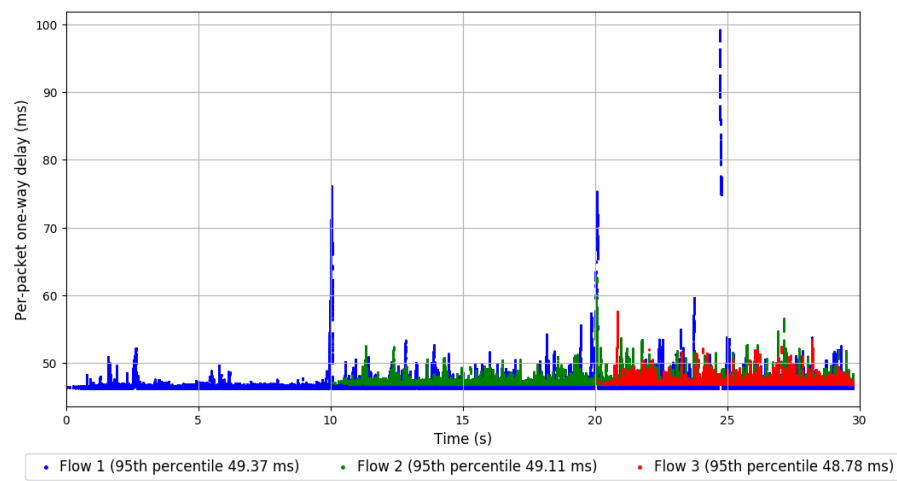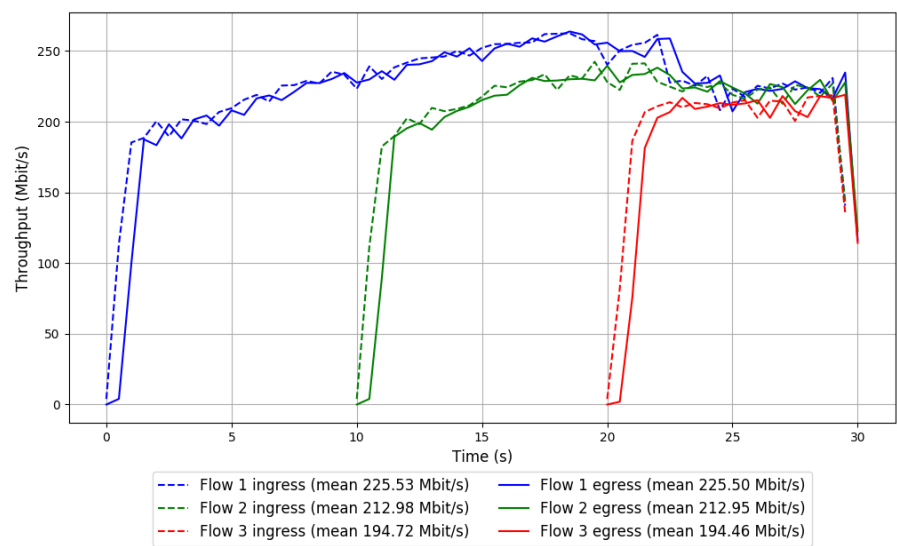
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-12-01 05:17:08
End at: 2018-12-01 05:17:38
Local clock offset: -0.131 ms
Remote clock offset: -0.057 ms

# Below is generated by plot.py at 2018-12-01 08:40:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 416.37 Mbit/s
95th percentile per-packet one-way delay: 50.110 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 219.05 Mbit/s
95th percentile per-packet one-way delay: 50.355 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 206.83 Mbit/s
95th percentile per-packet one-way delay: 50.297 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 184.03 Mbit/s
95th percentile per-packet one-way delay: 49.195 ms
Loss rate: 1.14%
```
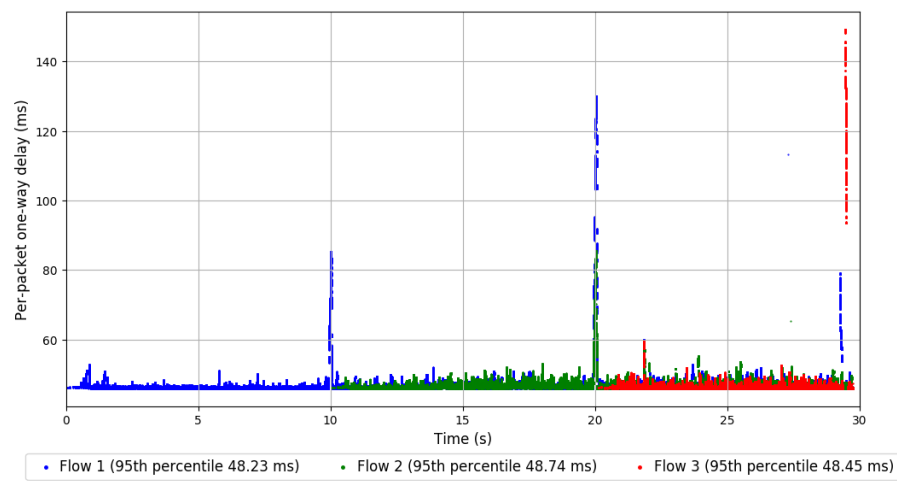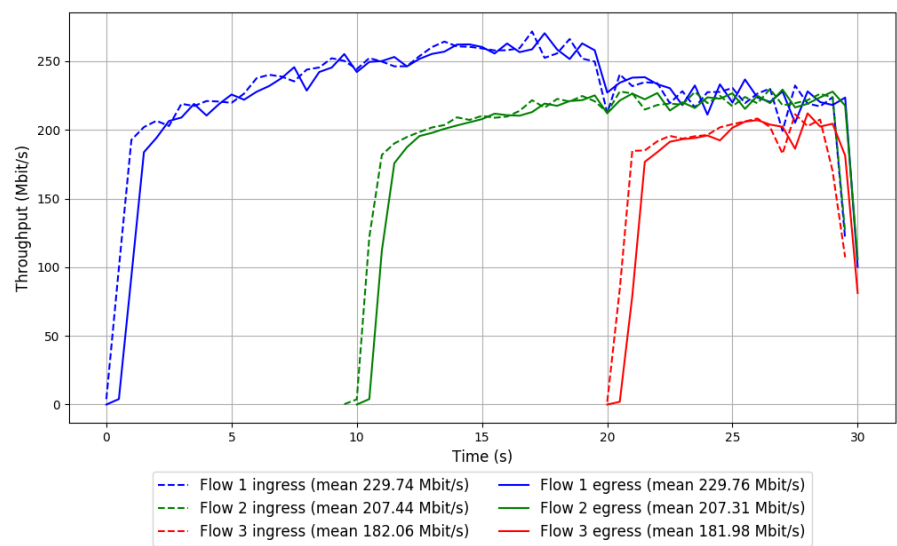
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-12-01 05:50:25
End at: 2018-12-01 05:50:55
Local clock offset: -0.2 ms
Remote clock offset: -0.037 ms


# Below is generated by plot.py at 2018-12-01 08:40:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 433.61 Mbit/s
95th percentile per-packet one-way delay: 49.331 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 234.02 Mbit/s
95th percentile per-packet one-way delay: 49.672 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 211.04 Mbit/s
95th percentile per-packet one-way delay: 48.902 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 180.43 Mbit/s
95th percentile per-packet one-way delay: 48.750 ms
Loss rate: 1.18%
```
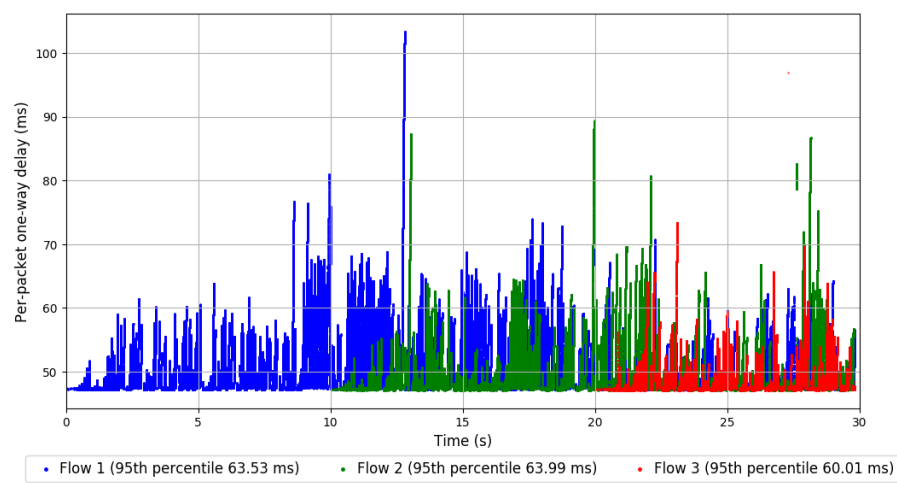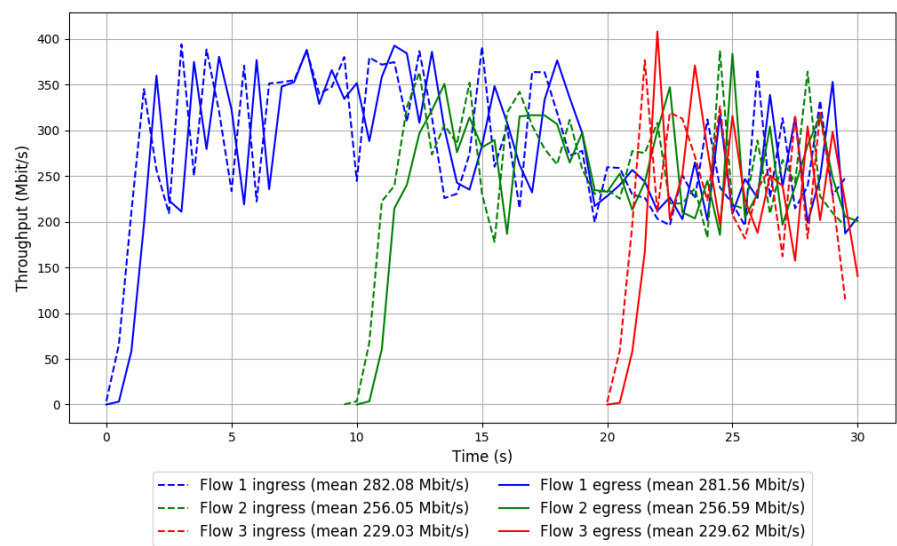
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-12-01 06:23:26
End at: 2018-12-01 06:23:56
Local clock offset: -0.101 ms
Remote clock offset: -0.045 ms


# Below is generated by plot.py at 2018-12-01 08:40:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 429.92 Mbit/s
95th percentile per-packet one-way delay: 49.138 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 225.50 Mbit/s
95th percentile per-packet one-way delay: 49.365 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 212.95 Mbit/s
95th percentile per-packet one-way delay: 49.108 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 194.46 Mbit/s
95th percentile per-packet one-way delay: 48.781 ms
Loss rate: 1.11%
```

Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-12-01 06:56:42
End at: 2018-12-01 06:57:12
Local clock offset: -0.425 ms
Remote clock offset: -0.122 ms


# Below is generated by plot.py at 2018-12-01 08:40:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 426.20 Mbit/s
95th percentile per-packet one-way delay: 48.472 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 229.76 Mbit/s
95th percentile per-packet one-way delay: 48.232 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 207.31 Mbit/s
95th percentile per-packet one-way delay: 48.736 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 181.98 Mbit/s
95th percentile per-packet one-way delay: 48.452 ms
Loss rate: 1.00%
```
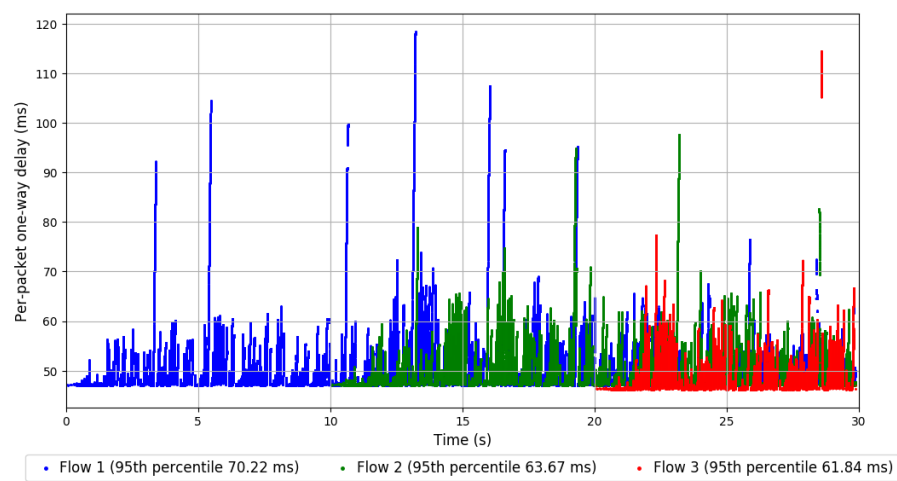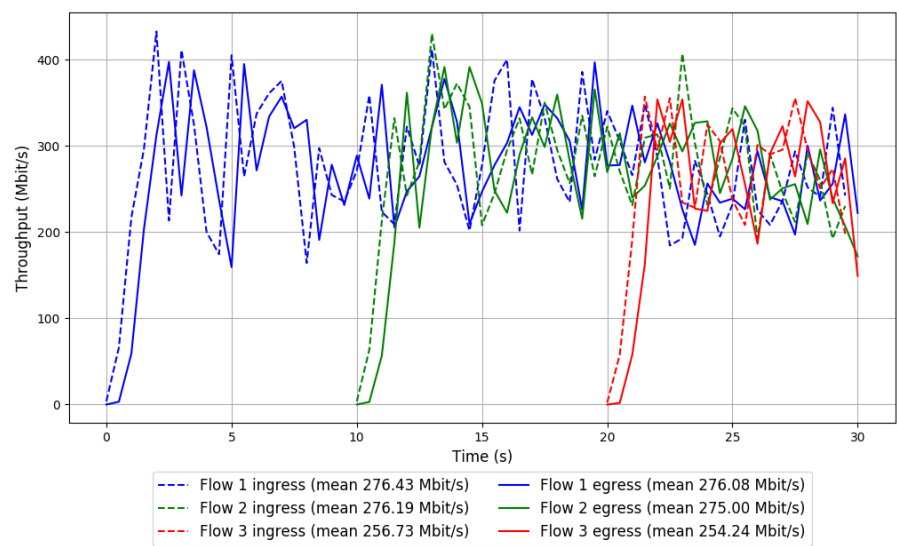
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-96d2da3

Start at: 2018-12-01 04:24:42
End at: 2018-12-01 04:25:12
Local clock offset: -0.099 ms
Remote clock offset: -0.002 ms


# Below is generated by plot.py at 2018-12-01 08:40:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 526.97 Mbit/s
95th percentile per-packet one-way delay: 63.242 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 281.56 Mbit/s
95th percentile per-packet one-way delay: 63.526 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 256.59 Mbit/s
95th percentile per-packet one-way delay: 63.993 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 229.62 Mbit/s
95th percentile per-packet one-way delay: 60.006 ms
Loss rate: 0.62%
```
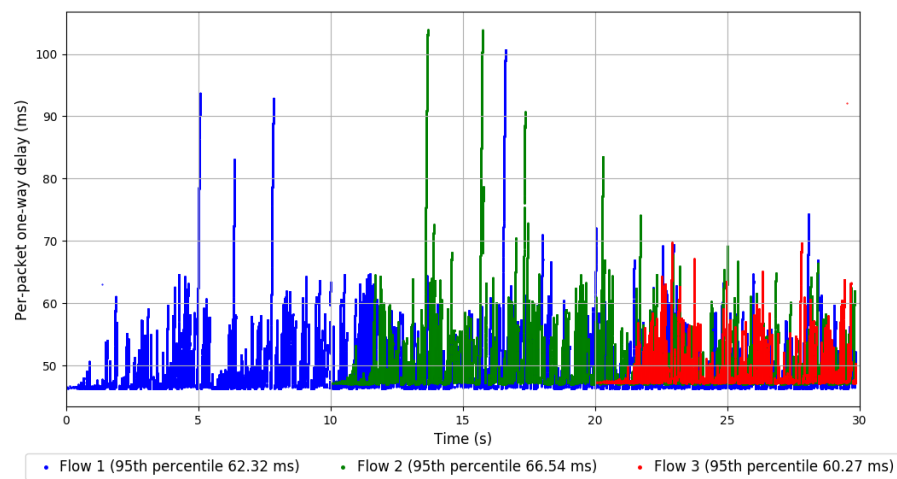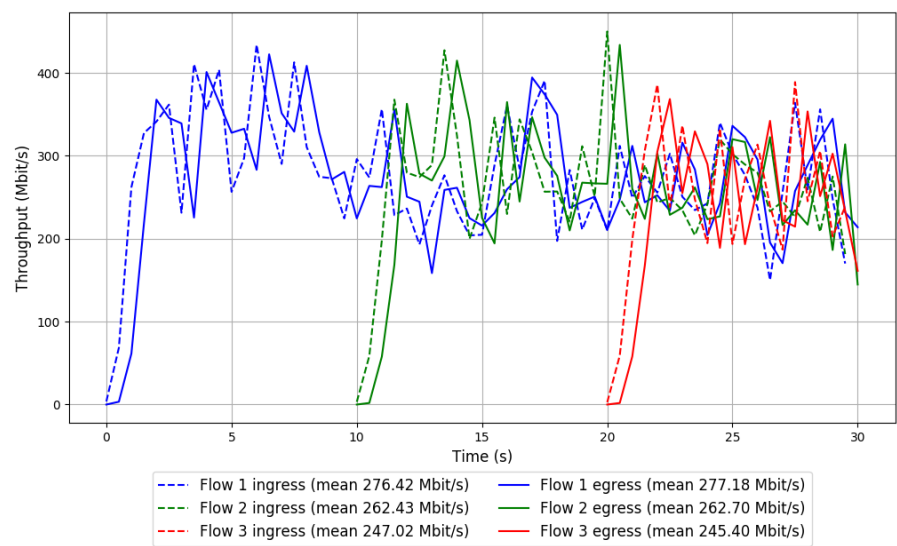
Run 1: Report of Indigo-96d2da3 — Data Link

```
Run 2: Statistics of Indigo-96d2da3

Start at: 2018-12-01 04:57:45
End at: 2018-12-01 04:58:15
Local clock offset: -0.146 ms
Remote clock offset: -0.032 ms


# Below is generated by plot.py at 2018-12-01 08:40:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 542.26 Mbit/s
95th percentile per-packet one-way delay: 65.291 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 276.08 Mbit/s
95th percentile per-packet one-way delay: 70.220 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 275.00 Mbit/s
95th percentile per-packet one-way delay: 63.674 ms
Loss rate: 0.85%
-- Flow 3:
Average throughput: 254.24 Mbit/s
95th percentile per-packet one-way delay: 61.841 ms
Loss rate: 1.60%
```
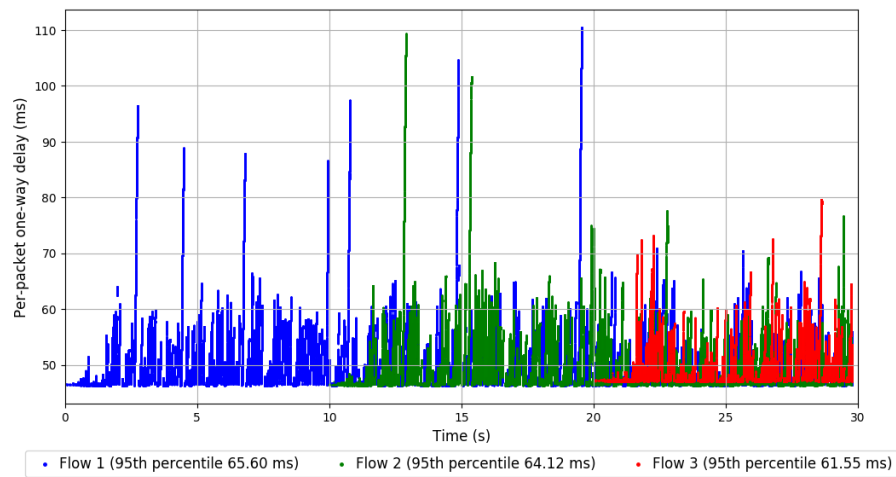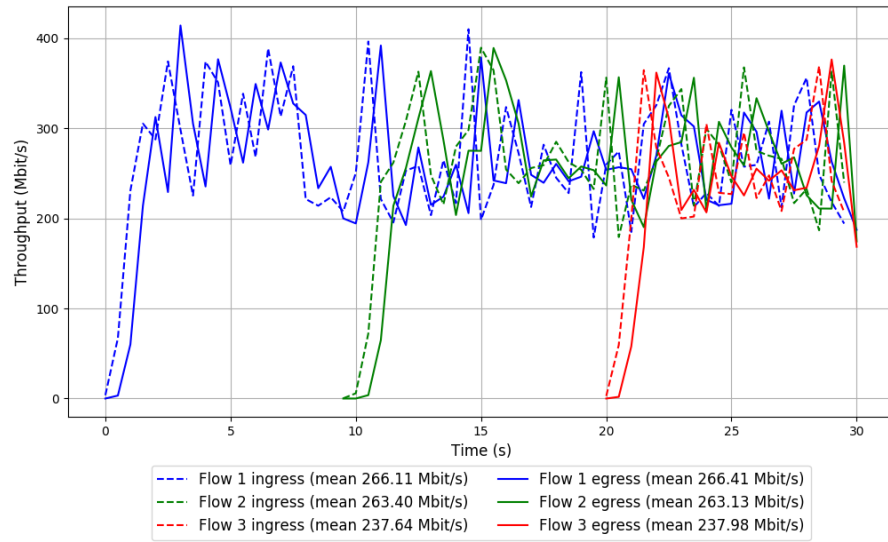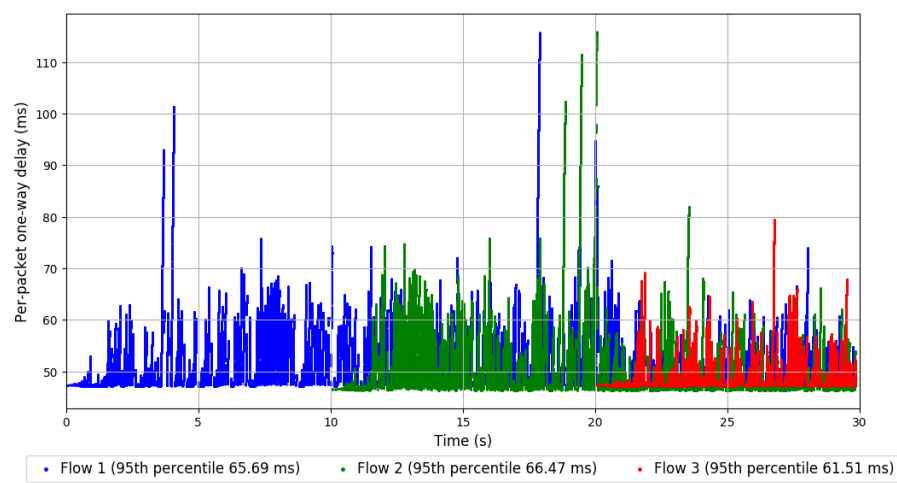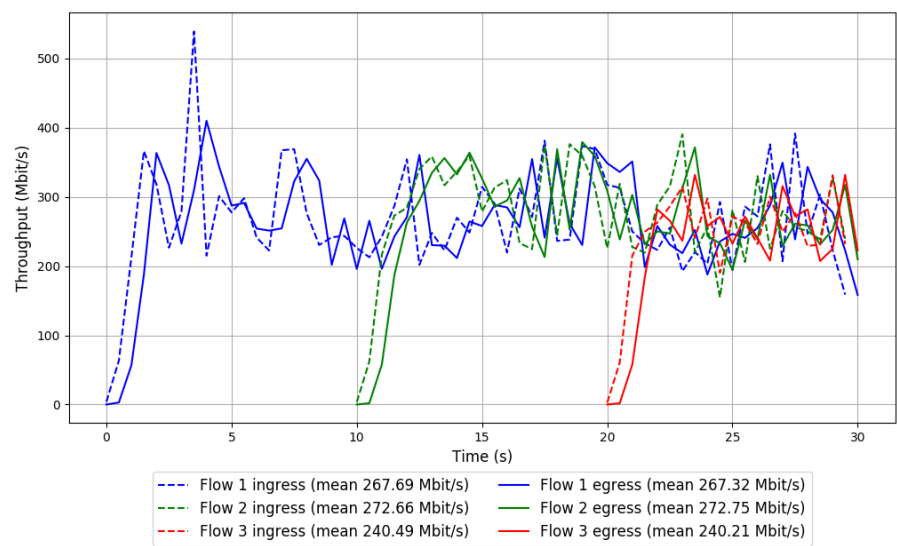
Run 2: Report of Indigo-96d2da3 — Data Link

```
Run 3: Statistics of Indigo-96d2da3

Start at: 2018-12-01 05:30:46
End at: 2018-12-01 05:31:16
Local clock offset: -0.157 ms
Remote clock offset: -0.04 ms


# Below is generated by plot.py at 2018-12-01 08:44:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 531.43 Mbit/s
95th percentile per-packet one-way delay: 63.140 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 277.18 Mbit/s
95th percentile per-packet one-way delay: 62.323 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 262.70 Mbit/s
95th percentile per-packet one-way delay: 66.542 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 245.40 Mbit/s
95th percentile per-packet one-way delay: 60.274 ms
Loss rate: 1.62%
```

Run 3: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 276.42 Mbit/s)   Flow 1 egress (mean 277.18 Mbit/s)
Flow 2 ingress (mean 262.43 Mbit/s)   Flow 2 egress (mean 262.70 Mbit/s)
Flow 3 ingress (mean 247.02 Mbit/s)   Flow 3 egress (mean 245.40 Mbit/s)

Flow 1 (95th percentile 62.32 ms)   Flow 2 (95th percentile 66.54 ms)   Flow 3 (95th percentile 60.27 ms)

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```
Run 4: Statistics of Indigo-96d2da3

Start at: 2018-12-01 06:03:44
End at: 2018-12-01 06:04:14
Local clock offset: -0.148 ms
Remote clock offset: -0.04 ms


# Below is generated by plot.py at 2018-12-01 08:44:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 519.06 Mbit/s
95th percentile per-packet one-way delay: 64.284 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 266.41 Mbit/s
95th percentile per-packet one-way delay: 65.600 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 263.13 Mbit/s
95th percentile per-packet one-way delay: 64.118 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 237.98 Mbit/s
95th percentile per-packet one-way delay: 61.551 ms
Loss rate: 0.83%
```

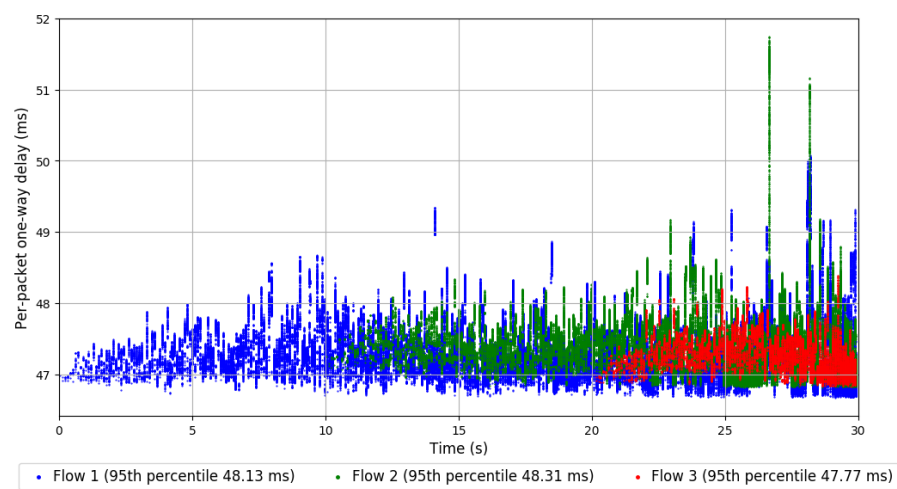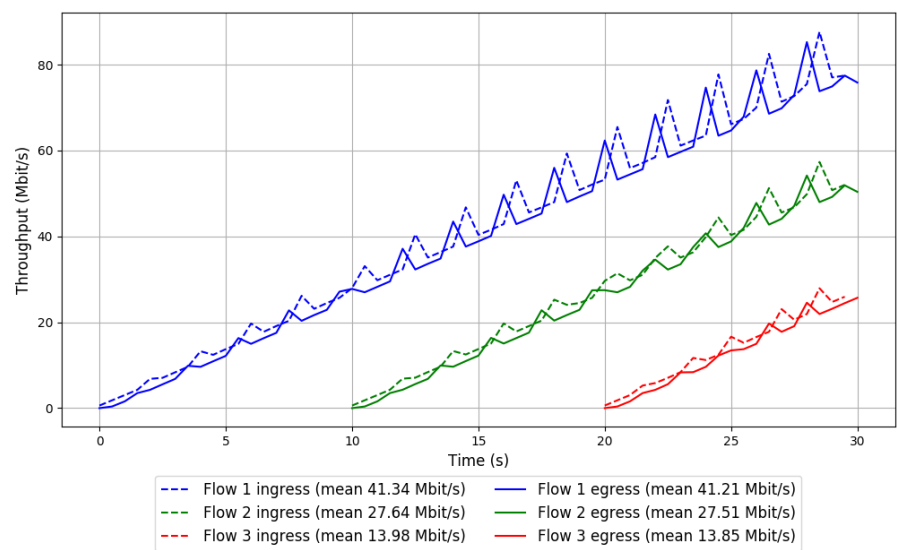Run 4: Report of Indigo-96d2da3 — Data Link

```
Run 5: Statistics of Indigo-96d2da3

Start at: 2018-12-01 06:36:54
End at: 2018-12-01 06:37:24
Local clock offset: -0.066 ms
Remote clock offset: -0.086 ms


# Below is generated by plot.py at 2018-12-01 08:46:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 527.00 Mbit/s
95th percentile per-packet one-way delay: 65.411 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 267.32 Mbit/s
95th percentile per-packet one-way delay: 65.692 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 272.75 Mbit/s
95th percentile per-packet one-way delay: 66.468 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 240.21 Mbit/s
95th percentile per-packet one-way delay: 61.505 ms
Loss rate: 0.85%
```
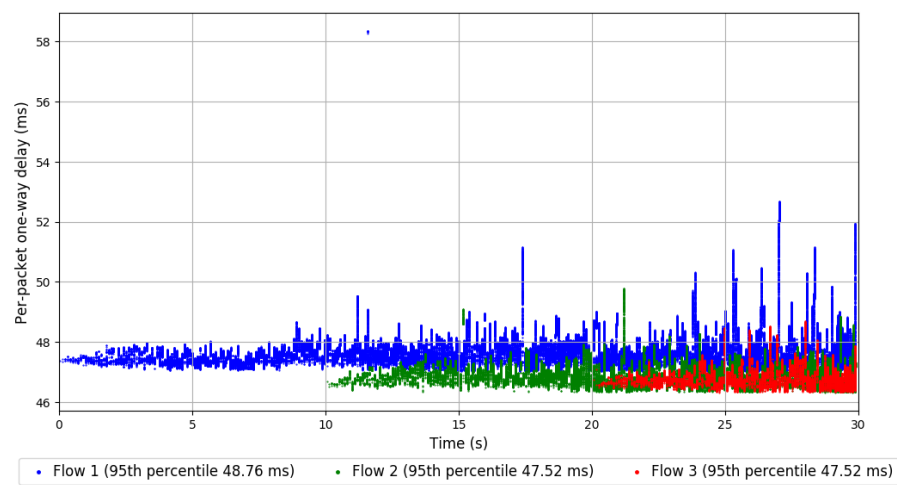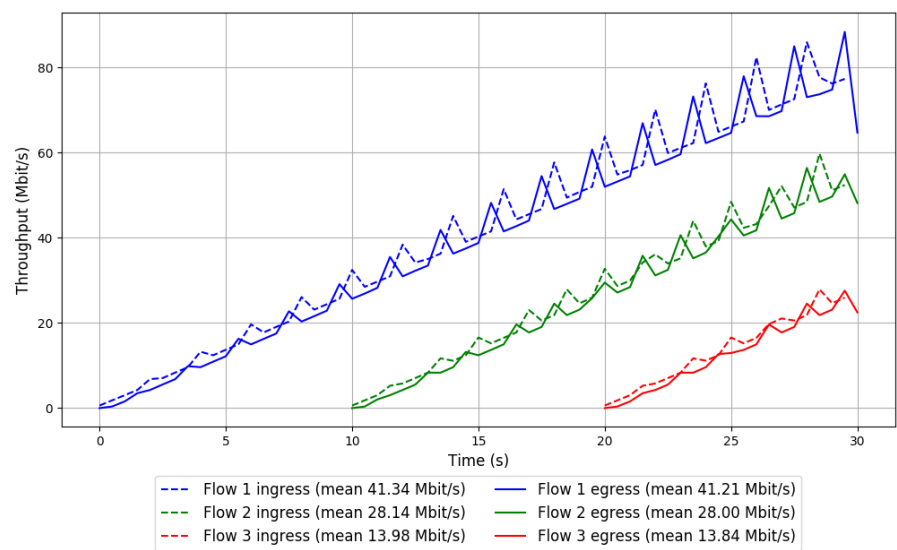
Run 5: Report of Indigo-96d2da3 — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-12-01 04:48:03
End at: 2018-12-01 04:48:33
Local clock offset: -0.441 ms
Remote clock offset: -0.03 ms

# Below is generated by plot.py at 2018-12-01 08:46:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.06 Mbit/s
95th percentile per-packet one-way delay: 48.165 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 41.21 Mbit/s
95th percentile per-packet one-way delay: 48.131 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 27.51 Mbit/s
95th percentile per-packet one-way delay: 48.315 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 13.85 Mbit/s
95th percentile per-packet one-way delay: 47.773 ms
Loss rate: 1.90%
```
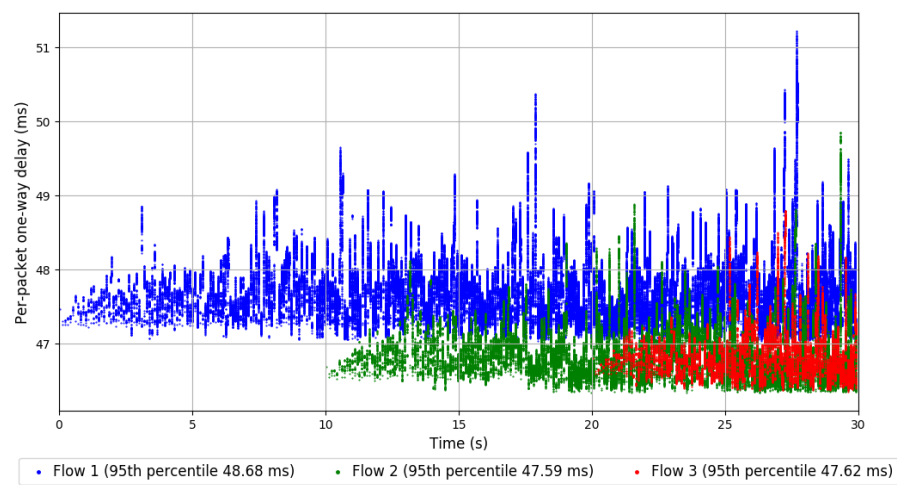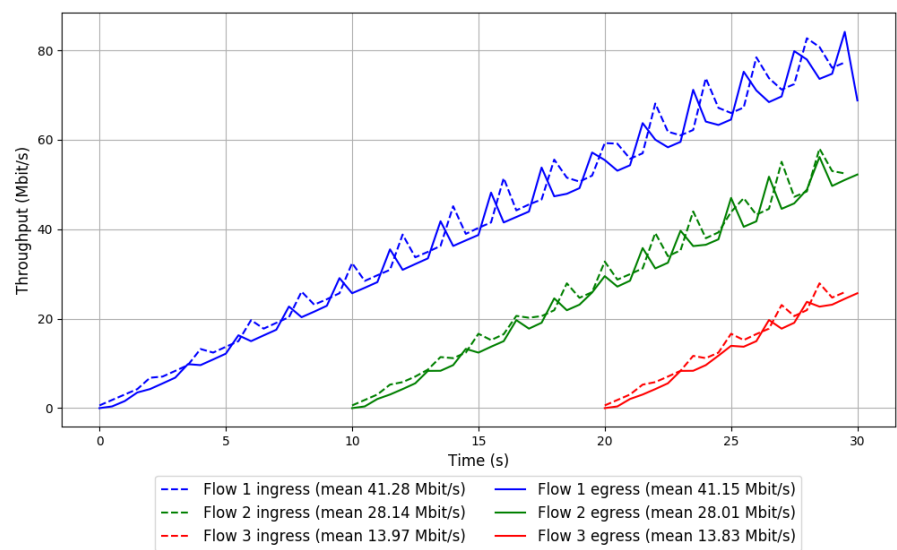
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-12-01 05:21:01
End at: 2018-12-01 05:21:31
Local clock offset: -0.153 ms
Remote clock offset: -0.119 ms

# Below is generated by plot.py at 2018-12-01 08:46:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.38 Mbit/s
95th percentile per-packet one-way delay: 48.510 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 41.21 Mbit/s
95th percentile per-packet one-way delay: 48.762 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 28.00 Mbit/s
95th percentile per-packet one-way delay: 47.523 ms
Loss rate: 0.94%
-- Flow 3:
Average throughput: 13.84 Mbit/s
95th percentile per-packet one-way delay: 47.519 ms
Loss rate: 1.91%
```
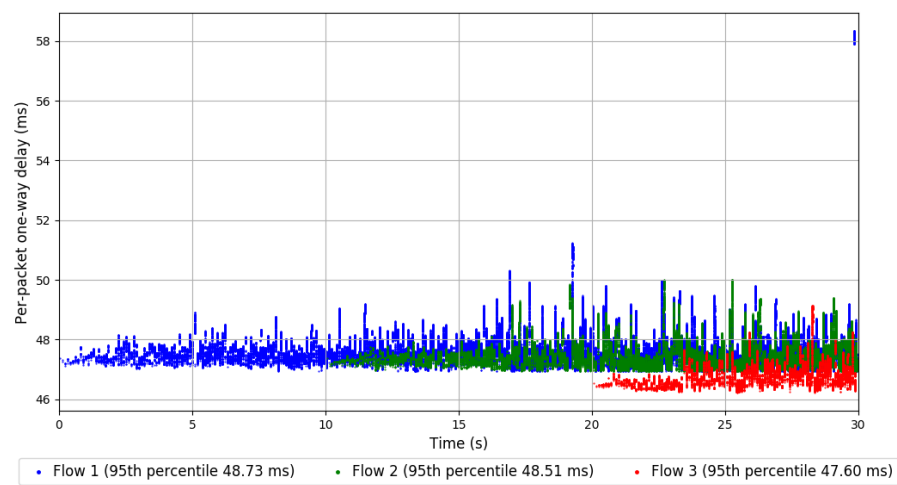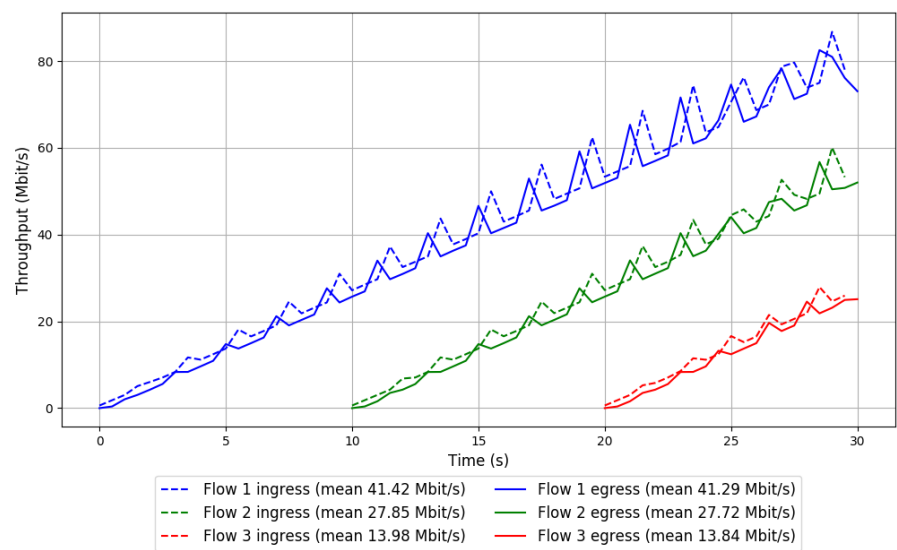
Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 41.34 Mbit/s) --- Flow 1 egress (mean 41.21 Mbit/s)
Flow 2 ingress (mean 28.14 Mbit/s) --- Flow 2 egress (mean 28.00 Mbit/s)
Flow 3 ingress (mean 13.98 Mbit/s) --- Flow 3 egress (mean 13.84 Mbit/s)

Flow 1 (95th percentile 48.76 ms)   Flow 2 (95th percentile 47.52 ms)   Flow 3 (95th percentile 47.52 ms)

```
Run 3: Statistics of LEDBAT

Start at: 2018-12-01 05:54:11
End at: 2018-12-01 05:54:41
Local clock offset: -0.189 ms
Remote clock offset: -0.052 ms


# Below is generated by plot.py at 2018-12-01 08:46:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.33 Mbit/s
95th percentile per-packet one-way delay: 48.513 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 41.15 Mbit/s
95th percentile per-packet one-way delay: 48.684 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 28.01 Mbit/s
95th percentile per-packet one-way delay: 47.585 ms
Loss rate: 0.94%
-- Flow 3:
Average throughput: 13.83 Mbit/s
95th percentile per-packet one-way delay: 47.622 ms
Loss rate: 1.90%
```
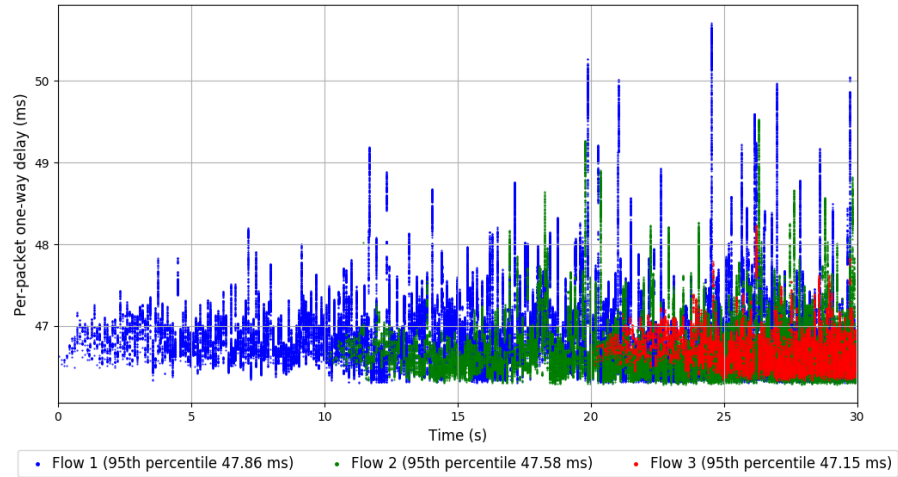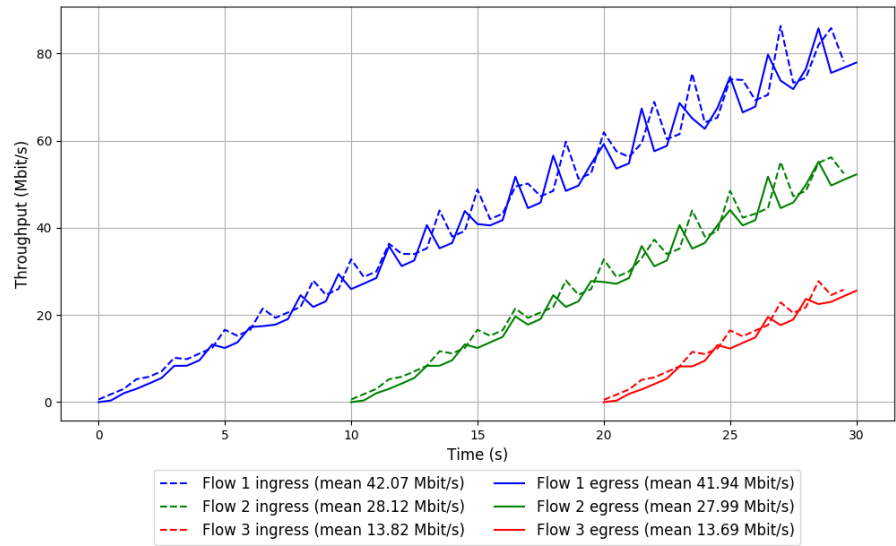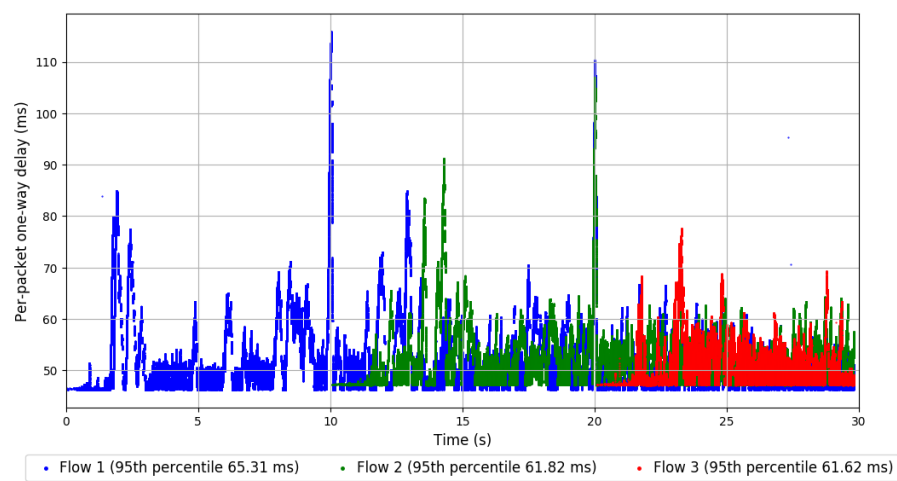
Run 3: Report of LEDBAT — Data Link

- - - - Flow 1 ingress (mean 41.28 Mbit/s) —— Flow 1 egress (mean 41.15 Mbit/s)
- - - - Flow 2 ingress (mean 28.14 Mbit/s) —— Flow 2 egress (mean 28.01 Mbit/s)
- - - - Flow 3 ingress (mean 13.97 Mbit/s) —— Flow 3 egress (mean 13.83 Mbit/s)

- Flow 1 (95th percentile 48.68 ms)   • Flow 2 (95th percentile 47.59 ms)   • Flow 3 (95th percentile 47.62 ms)

```
Run 4: Statistics of LEDBAT

Start at: 2018-12-01 06:27:21
End at: 2018-12-01 06:27:51
Local clock offset: -0.094 ms
Remote clock offset: -0.039 ms


# Below is generated by plot.py at 2018-12-01 08:46:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.27 Mbit/s
95th percentile per-packet one-way delay: 48.641 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 41.29 Mbit/s
95th percentile per-packet one-way delay: 48.734 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 27.72 Mbit/s
95th percentile per-packet one-way delay: 48.510 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 13.84 Mbit/s
95th percentile per-packet one-way delay: 47.598 ms
Loss rate: 1.91%
```
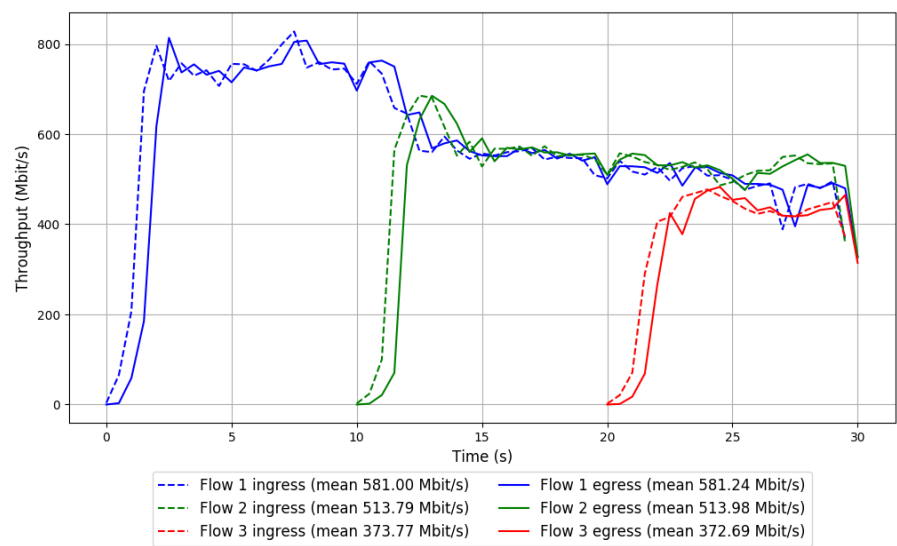
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-12-01 07:00:34
End at: 2018-12-01 07:01:04
Local clock offset: -0.078 ms
Remote clock offset: -0.112 ms


# Below is generated by plot.py at 2018-12-01 08:46:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 65.06 Mbit/s
95th percentile per-packet one-way delay: 47.759 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 41.94 Mbit/s
95th percentile per-packet one-way delay: 47.863 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 27.99 Mbit/s
95th percentile per-packet one-way delay: 47.575 ms
Loss rate: 0.94%
-- Flow 3:
Average throughput: 13.69 Mbit/s
95th percentile per-packet one-way delay: 47.148 ms
Loss rate: 1.91%
```
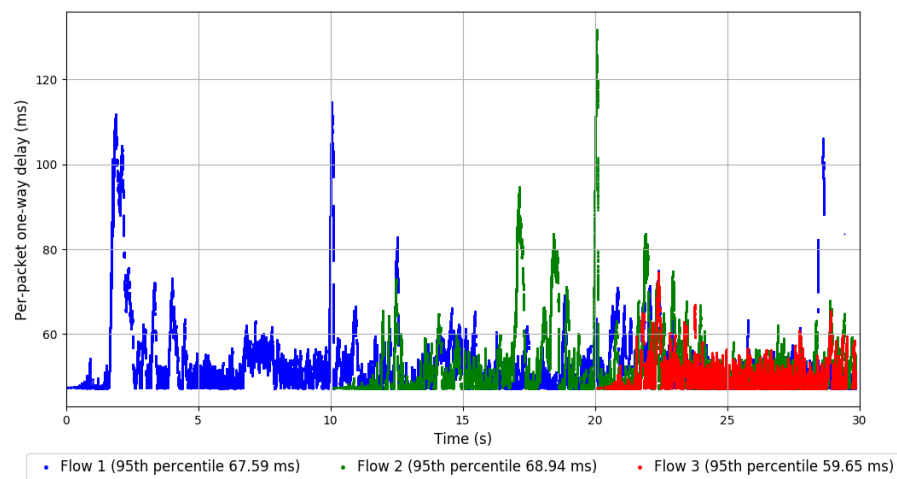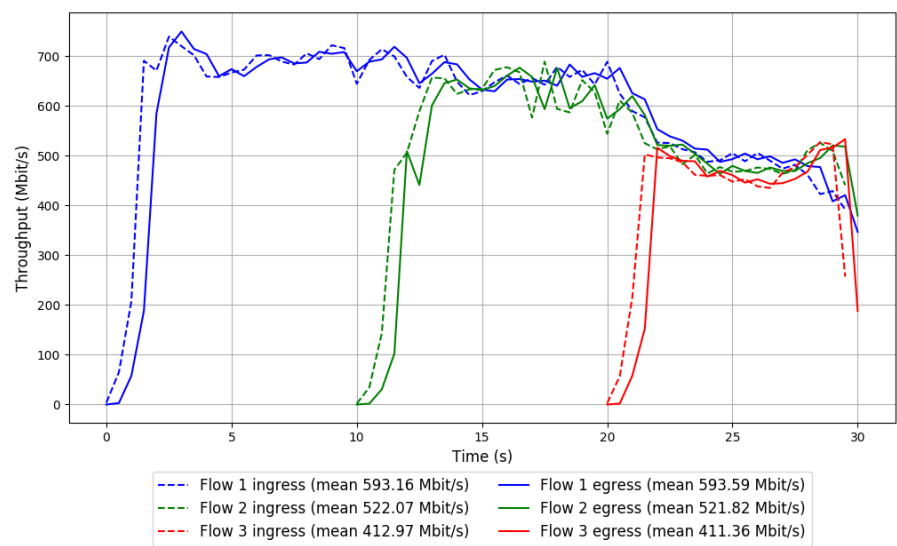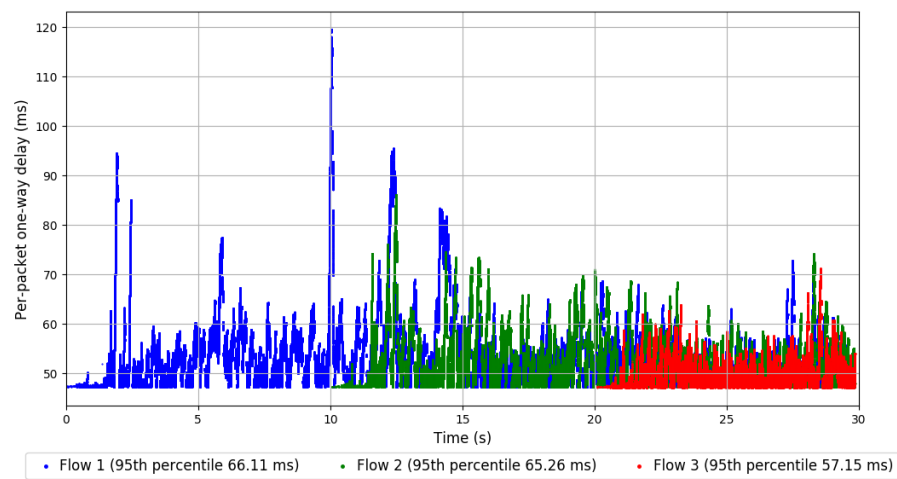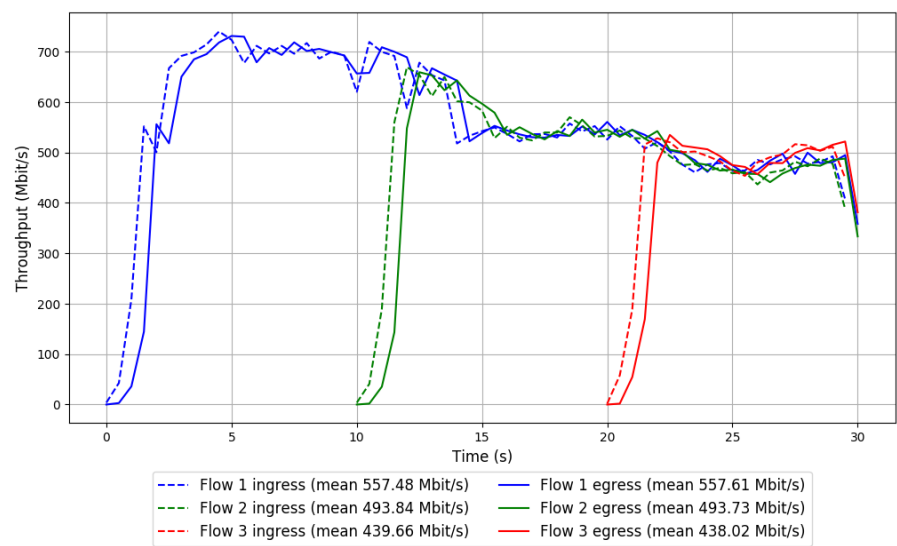
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-12-01 04:21:26
End at: 2018-12-01 04:21:56
Local clock offset: -0.115 ms
Remote clock offset: -0.033 ms


# Below is generated by plot.py at 2018-12-01 09:00:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1044.04 Mbit/s
95th percentile per-packet one-way delay: 63.963 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 581.24 Mbit/s
95th percentile per-packet one-way delay: 65.309 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 513.98 Mbit/s
95th percentile per-packet one-way delay: 61.816 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 372.69 Mbit/s
95th percentile per-packet one-way delay: 61.624 ms
Loss rate: 1.25%
```

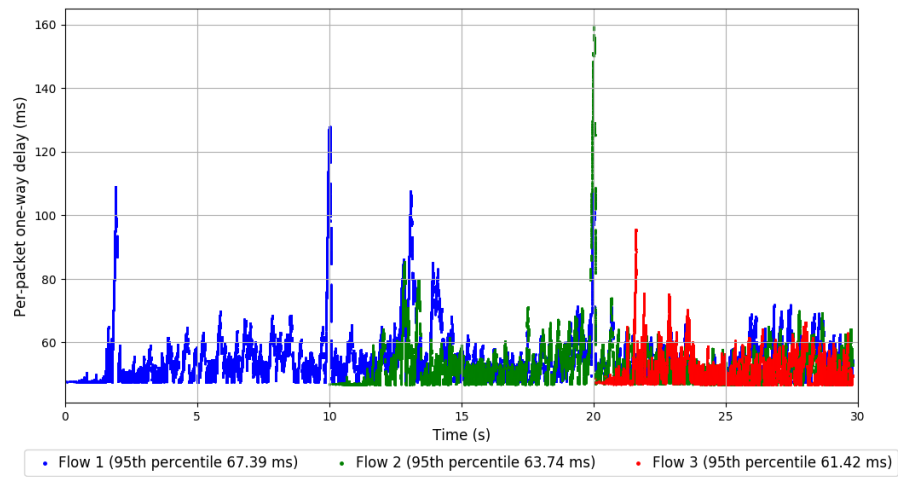Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-12-01 04:54:28
End at: 2018-12-01 04:54:58
Local clock offset: -0.117 ms
Remote clock offset: -0.06 ms


# Below is generated by plot.py at 2018-12-01 09:00:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1074.26 Mbit/s
95th percentile per-packet one-way delay: 66.762 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 593.59 Mbit/s
95th percentile per-packet one-way delay: 67.590 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 521.82 Mbit/s
95th percentile per-packet one-way delay: 68.942 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 411.36 Mbit/s
95th percentile per-packet one-way delay: 59.654 ms
Loss rate: 1.38%
```

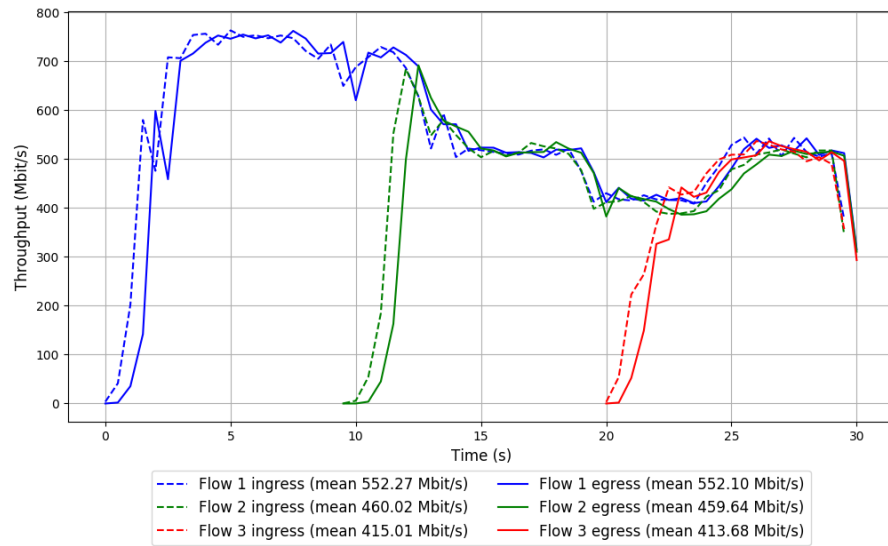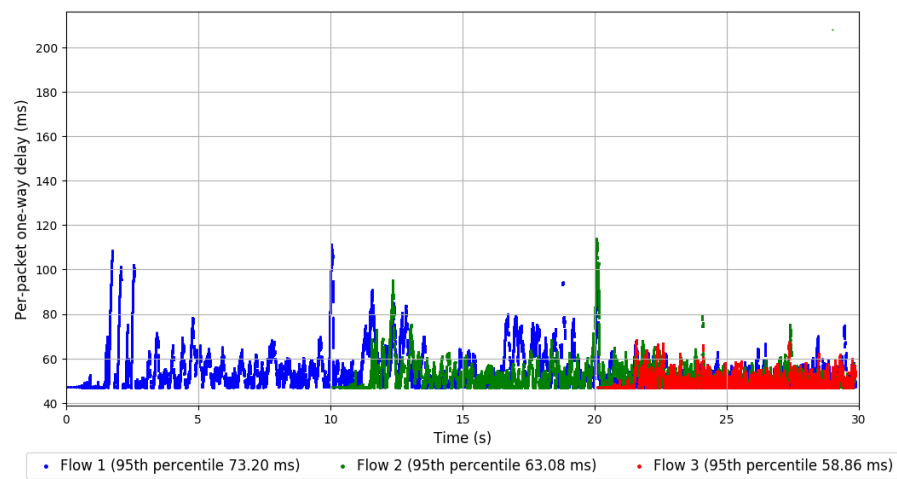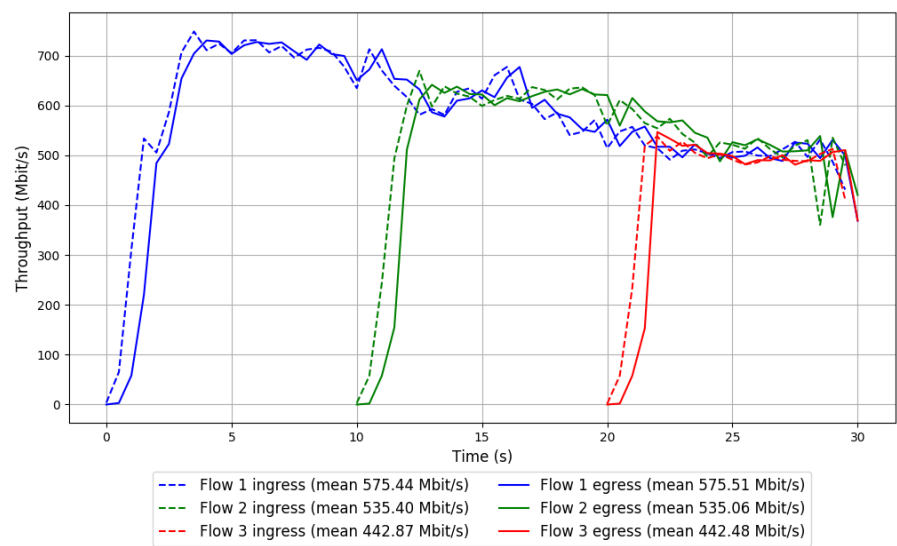Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-12-01 05:27:28
End at: 2018-12-01 05:27:58
Local clock offset: -0.16 ms
Remote clock offset: -0.051 ms


# Below is generated by plot.py at 2018-12-01 09:00:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1028.96 Mbit/s
95th percentile per-packet one-way delay: 64.590 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 557.61 Mbit/s
95th percentile per-packet one-way delay: 66.114 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 493.73 Mbit/s
95th percentile per-packet one-way delay: 65.261 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 438.02 Mbit/s
95th percentile per-packet one-way delay: 57.152 ms
Loss rate: 1.33%
```

Run 3: Report of Indigo-Muses — Data Link

- - - Flow 1 ingress (mean 557.48 Mbit/s)   —— Flow 1 egress (mean 557.61 Mbit/s)
- - - Flow 2 ingress (mean 493.84 Mbit/s)   —— Flow 2 egress (mean 493.73 Mbit/s)
- - - Flow 3 ingress (mean 439.66 Mbit/s)   —— Flow 3 egress (mean 438.02 Mbit/s)

- Flow 1 (95th percentile 66.11 ms)   - Flow 2 (95th percentile 65.26 ms)   - Flow 3 (95th percentile 57.15 ms)

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-12-01 06:00:28
End at: 2018-12-01 06:00:58
Local clock offset: 0.233 ms
Remote clock offset: -0.073 ms


# Below is generated by plot.py at 2018-12-01 09:00:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 993.24 Mbit/s
95th percentile per-packet one-way delay: 65.526 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 552.10 Mbit/s
95th percentile per-packet one-way delay: 67.385 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 459.64 Mbit/s
95th percentile per-packet one-way delay: 63.738 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 413.68 Mbit/s
95th percentile per-packet one-way delay: 61.419 ms
Loss rate: 1.28%
```

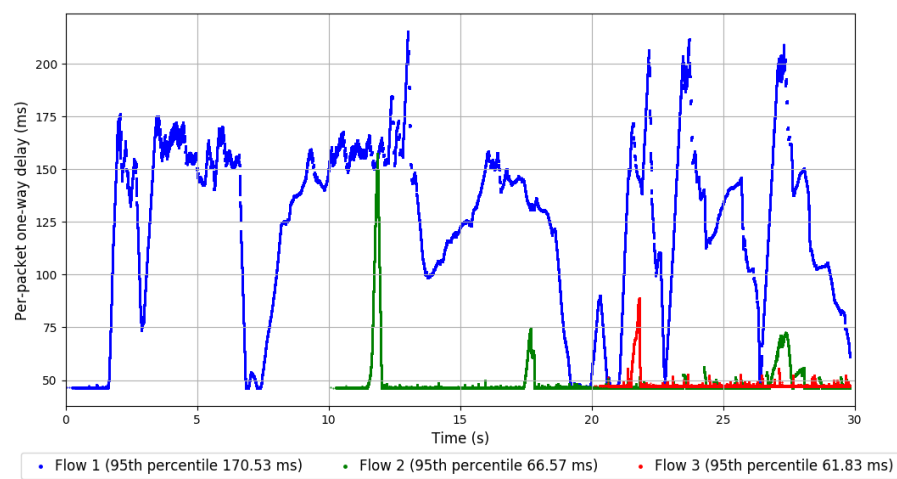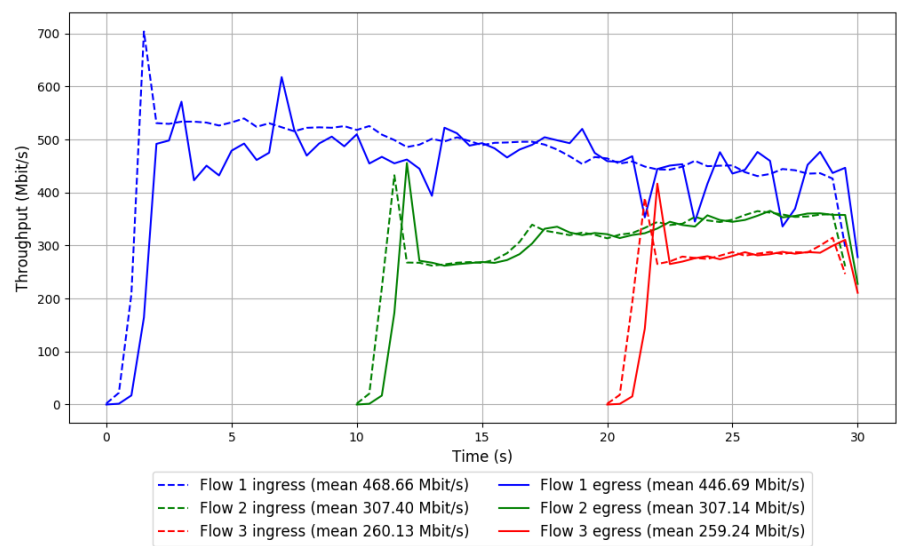Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-12-01 06:33:35
End at: 2018-12-01 06:34:05
Local clock offset: -0.131 ms
Remote clock offset: -0.079 ms

# Below is generated by plot.py at 2018-12-01 09:01:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1075.79 Mbit/s
95th percentile per-packet one-way delay: 69.185 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 575.51 Mbit/s
95th percentile per-packet one-way delay: 73.201 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 535.06 Mbit/s
95th percentile per-packet one-way delay: 63.076 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 442.48 Mbit/s
95th percentile per-packet one-way delay: 58.859 ms
Loss rate: 1.06%
```

Run 5: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 575.44 Mbit/s) --- Flow 1 egress (mean 575.51 Mbit/s)
Flow 2 ingress (mean 535.40 Mbit/s) --- Flow 2 egress (mean 535.06 Mbit/s)
Flow 3 ingress (mean 442.87 Mbit/s) --- Flow 3 egress (mean 442.48 Mbit/s)

Flow 1 (95th percentile 73.20 ms)   Flow 2 (95th percentile 63.08 ms)   Flow 3 (95th percentile 58.86 ms)
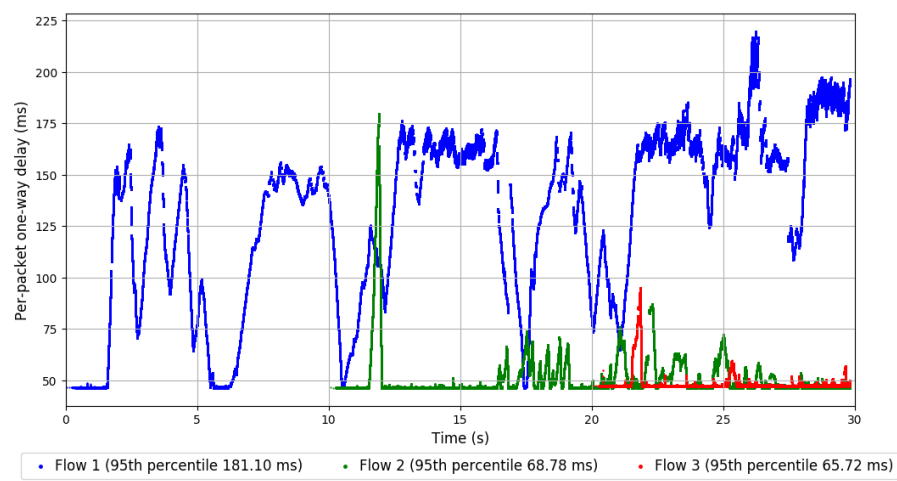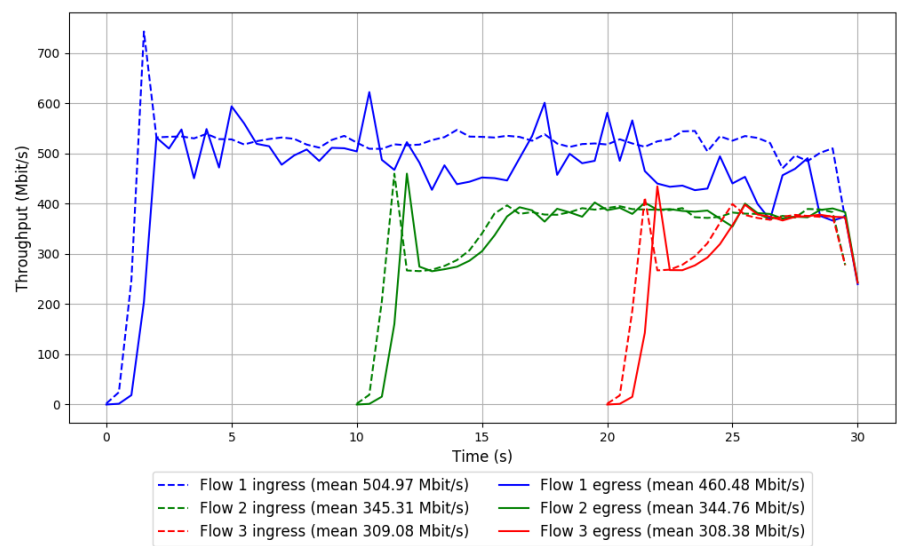
94

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-12-01 04:19:26
End at: 2018-12-01 04:19:56
Local clock offset: -0.1 ms
Remote clock offset: -0.023 ms


# Below is generated by plot.py at 2018-12-01 09:10:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 735.11 Mbit/s
95th percentile per-packet one-way delay: 165.307 ms
Loss rate: 3.38%
-- Flow 1:
Average throughput: 446.69 Mbit/s
95th percentile per-packet one-way delay: 170.525 ms
Loss rate: 4.99%
-- Flow 2:
Average throughput: 307.14 Mbit/s
95th percentile per-packet one-way delay: 66.572 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 259.24 Mbit/s
95th percentile per-packet one-way delay: 61.826 ms
Loss rate: 1.31%
```
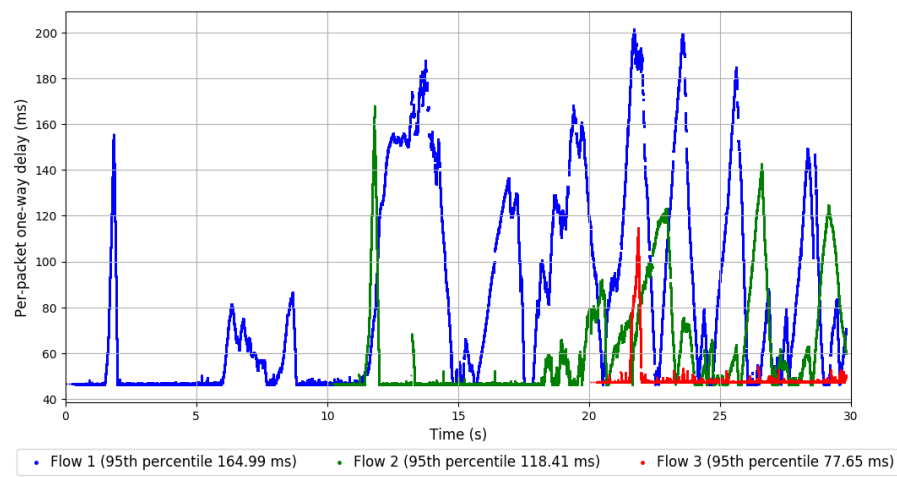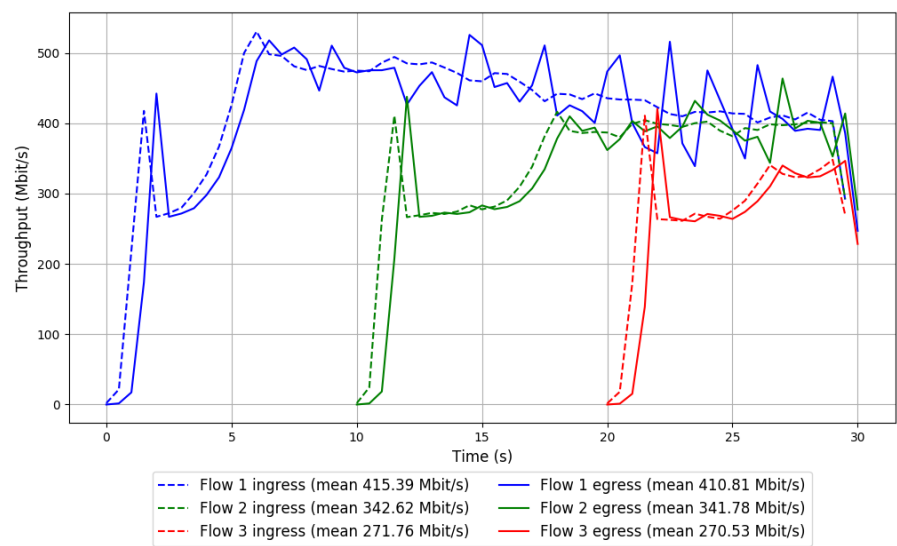
Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-12-01 04:52:22
End at: 2018-12-01 04:52:52
Local clock offset: 0.264 ms
Remote clock offset: -0.037 ms


# Below is generated by plot.py at 2018-12-01 09:14:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 785.67 Mbit/s
95th percentile per-packet one-way delay: 207.270 ms
Loss rate: 10.48%
-- Flow 1:
Average throughput: 438.21 Mbit/s
95th percentile per-packet one-way delay: 202.314 ms
Loss rate: 9.55%
-- Flow 2:
Average throughput: 412.81 Mbit/s
95th percentile per-packet one-way delay: 232.895 ms
Loss rate: 13.30%
-- Flow 3:
Average throughput: 224.46 Mbit/s
95th percentile per-packet one-way delay: 321.063 ms
Loss rate: 4.77%
```

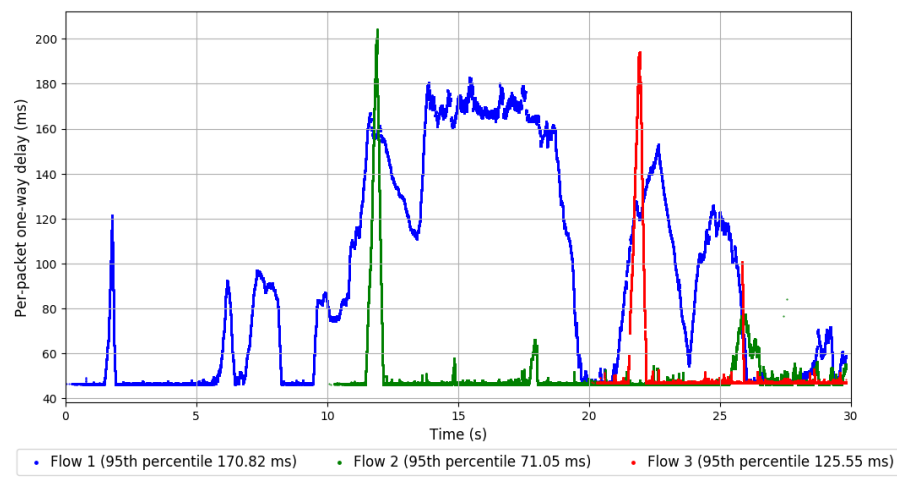Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-12-01 05:25:21
End at: 2018-12-01 05:25:51
Local clock offset: -0.115 ms
Remote clock offset: -0.023 ms


# Below is generated by plot.py at 2018-12-01 09:15:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 790.05 Mbit/s
95th percentile per-packet one-way delay: 171.082 ms
Loss rate: 5.81%
-- Flow 1:
Average throughput: 460.48 Mbit/s
95th percentile per-packet one-way delay: 181.101 ms
Loss rate: 9.10%
-- Flow 2:
Average throughput: 344.76 Mbit/s
95th percentile per-packet one-way delay: 68.778 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 308.38 Mbit/s
95th percentile per-packet one-way delay: 65.715 ms
Loss rate: 1.20%
```

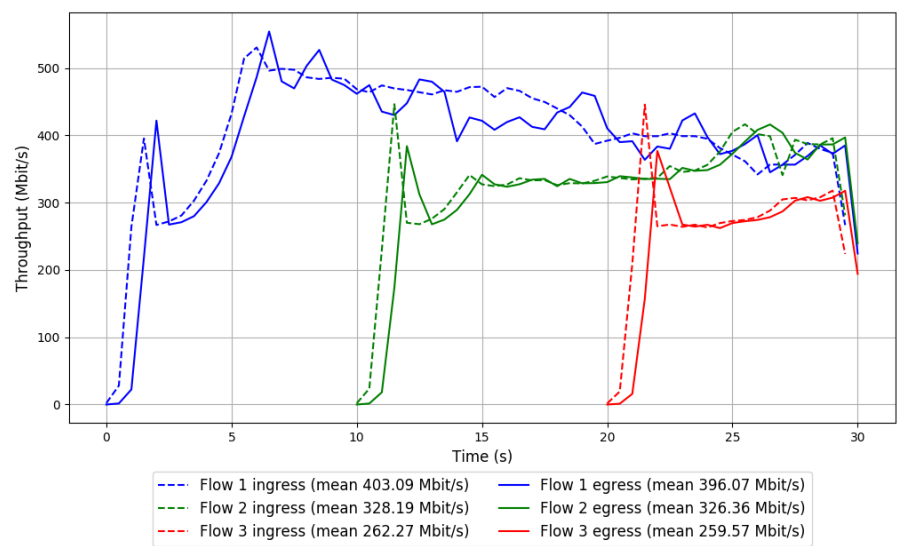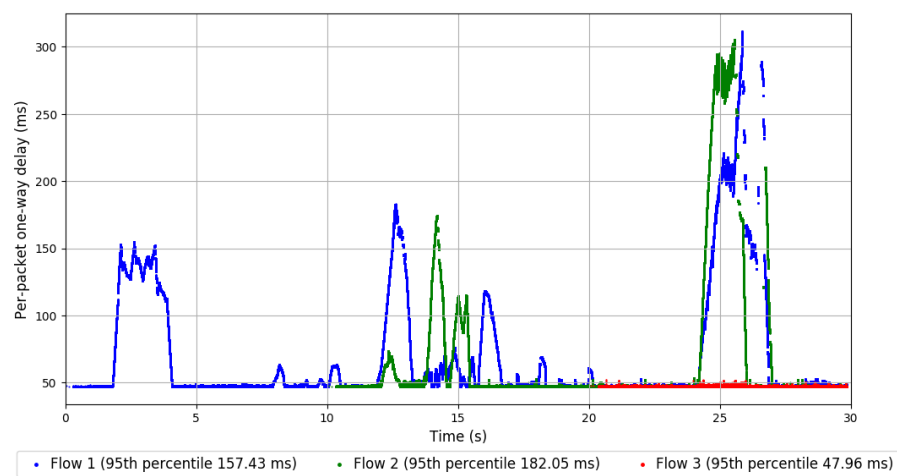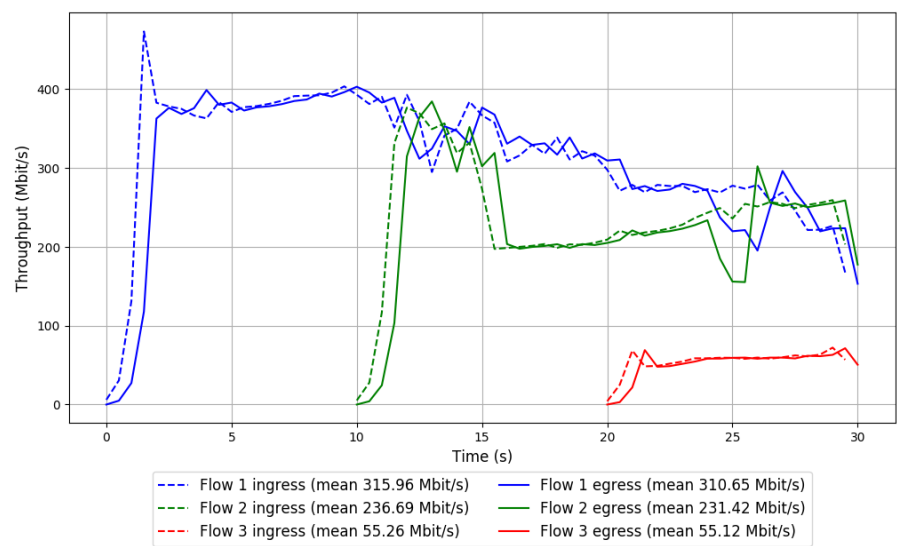Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-12-01 05:58:29
End at: 2018-12-01 05:58:59
Local clock offset: -0.129 ms
Remote clock offset: -0.049 ms


# Below is generated by plot.py at 2018-12-01 09:27:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 726.15 Mbit/s
95th percentile per-packet one-way delay: 154.629 ms
Loss rate: 1.20%
-- Flow 1:
Average throughput: 410.81 Mbit/s
95th percentile per-packet one-way delay: 164.986 ms
Loss rate: 1.42%
-- Flow 2:
Average throughput: 341.78 Mbit/s
95th percentile per-packet one-way delay: 118.414 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 270.53 Mbit/s
95th percentile per-packet one-way delay: 77.649 ms
Loss rate: 1.42%
```

Run 4: Report of PCC-Allegro — Data Link

- - - - Flow 1 ingress (mean 415.39 Mbit/s) — Flow 1 egress (mean 410.81 Mbit/s)
- - - - Flow 2 ingress (mean 342.62 Mbit/s) — Flow 2 egress (mean 341.78 Mbit/s)
- - - - Flow 3 ingress (mean 271.76 Mbit/s) — Flow 3 egress (mean 270.53 Mbit/s)

• Flow 1 (95th percentile 164.99 ms)   • Flow 2 (95th percentile 118.41 ms)   • Flow 3 (95th percentile 77.65 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-12-01 06:31:38
End at: 2018-12-01 06:32:08
Local clock offset: -0.174 ms
Remote clock offset: -0.102 ms


# Below is generated by plot.py at 2018-12-01 09:27:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 697.45 Mbit/s
95th percentile per-packet one-way delay: 168.645 ms
Loss rate: 1.73%
-- Flow 1:
Average throughput: 396.07 Mbit/s
95th percentile per-packet one-way delay: 170.820 ms
Loss rate: 2.05%
-- Flow 2:
Average throughput: 326.36 Mbit/s
95th percentile per-packet one-way delay: 71.049 ms
Loss rate: 1.03%
-- Flow 3:
Average throughput: 259.57 Mbit/s
95th percentile per-packet one-way delay: 125.554 ms
Loss rate: 1.97%
```

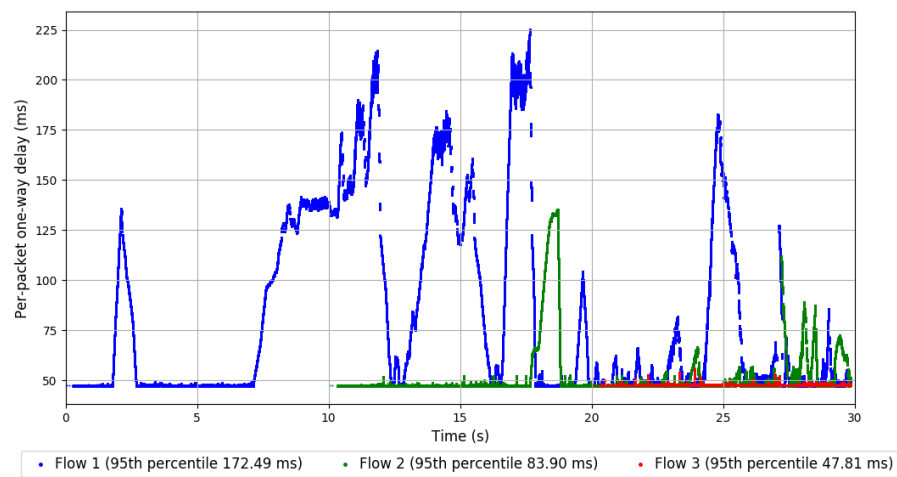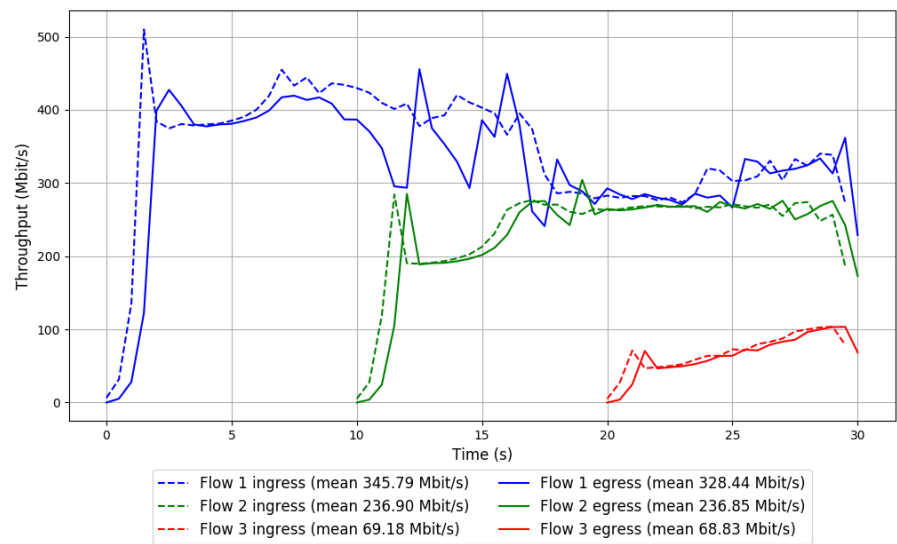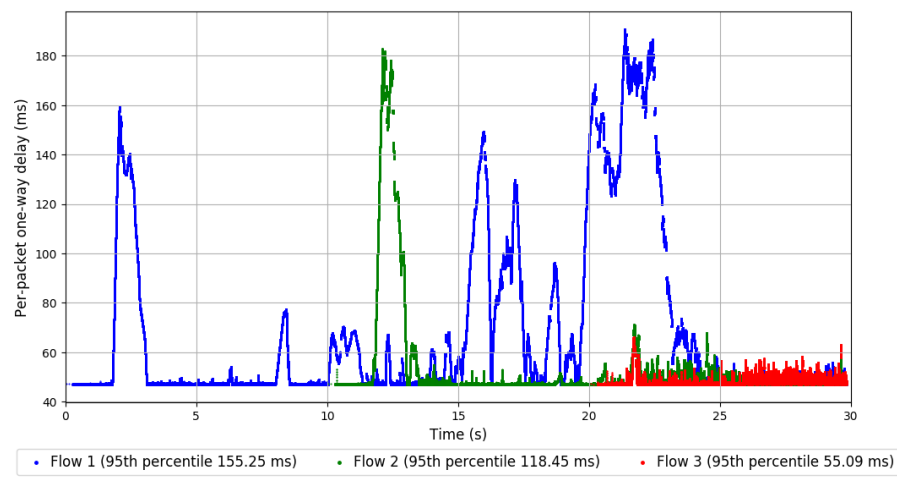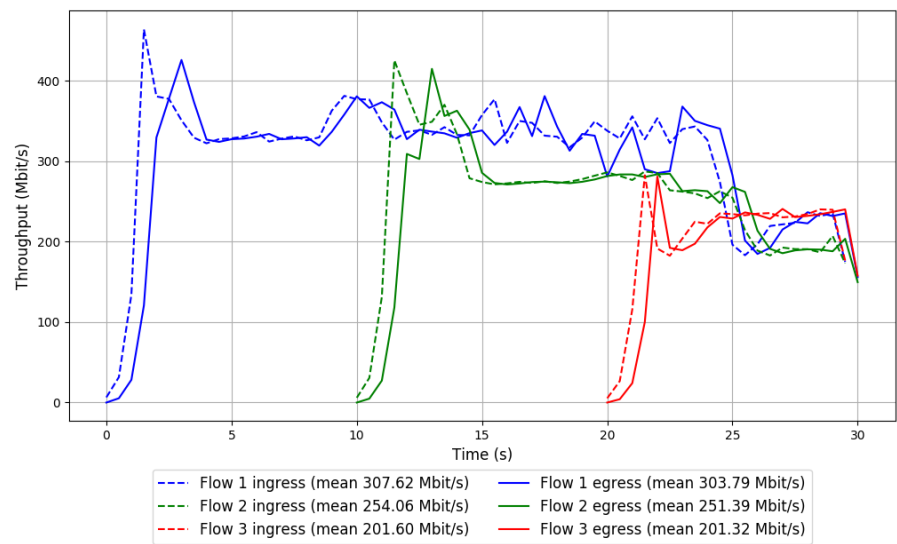Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2018-12-01 04:28:17
End at: 2018-12-01 04:28:47
Local clock offset: -0.104 ms
Remote clock offset: -0.046 ms


# Below is generated by plot.py at 2018-12-01 09:27:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 482.32 Mbit/s
95th percentile per-packet one-way delay: 161.882 ms
Loss rate: 2.19%
-- Flow 1:
Average throughput: 310.65 Mbit/s
95th percentile per-packet one-way delay: 157.431 ms
Loss rate: 1.99%
-- Flow 2:
Average throughput: 231.42 Mbit/s
95th percentile per-packet one-way delay: 182.046 ms
Loss rate: 2.72%
-- Flow 3:
Average throughput: 55.12 Mbit/s
95th percentile per-packet one-way delay: 47.964 ms
Loss rate: 1.22%
```

Run 1: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 315.96 Mbit/s) — — — Flow 1 egress (mean 310.65 Mbit/s)
Flow 2 ingress (mean 236.69 Mbit/s) — — — Flow 2 egress (mean 231.42 Mbit/s)
Flow 3 ingress (mean 55.26 Mbit/s) — — — Flow 3 egress (mean 55.12 Mbit/s)

Flow 1 (95th percentile 157.43 ms)   Flow 2 (95th percentile 182.05 ms)   Flow 3 (95th percentile 47.96 ms)
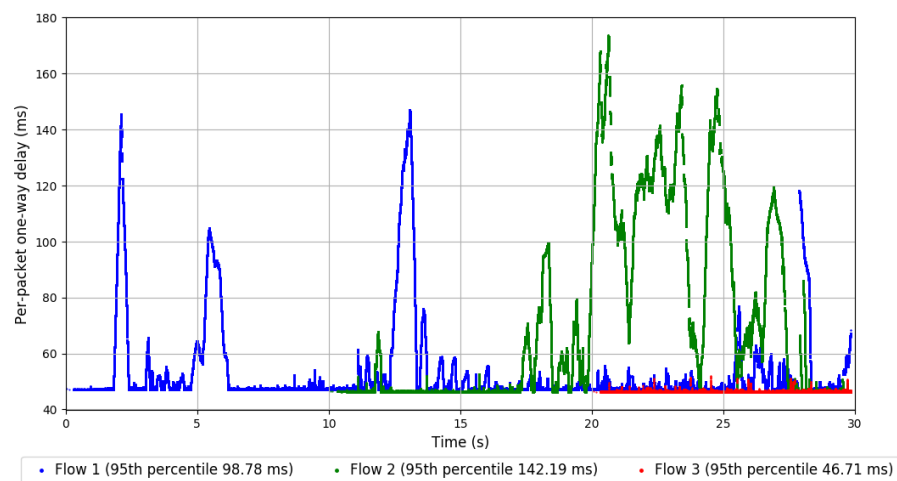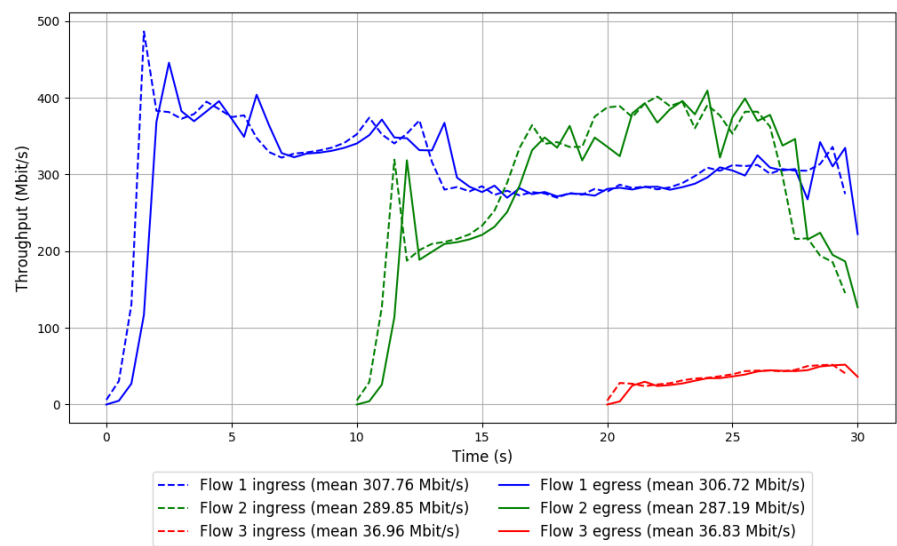
```
Run 2: Statistics of PCC-Expr

Start at: 2018-12-01 05:01:20
End at: 2018-12-01 05:01:50
Local clock offset: -0.126 ms
Remote clock offset: -0.056 ms


# Below is generated by plot.py at 2018-12-01 09:27:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 508.27 Mbit/s
95th percentile per-packet one-way delay: 159.144 ms
Loss rate: 3.71%
-- Flow 1:
Average throughput: 328.44 Mbit/s
95th percentile per-packet one-way delay: 172.486 ms
Loss rate: 5.32%
-- Flow 2:
Average throughput: 236.85 Mbit/s
95th percentile per-packet one-way delay: 83.901 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 68.83 Mbit/s
95th percentile per-packet one-way delay: 47.808 ms
Loss rate: 1.46%
```

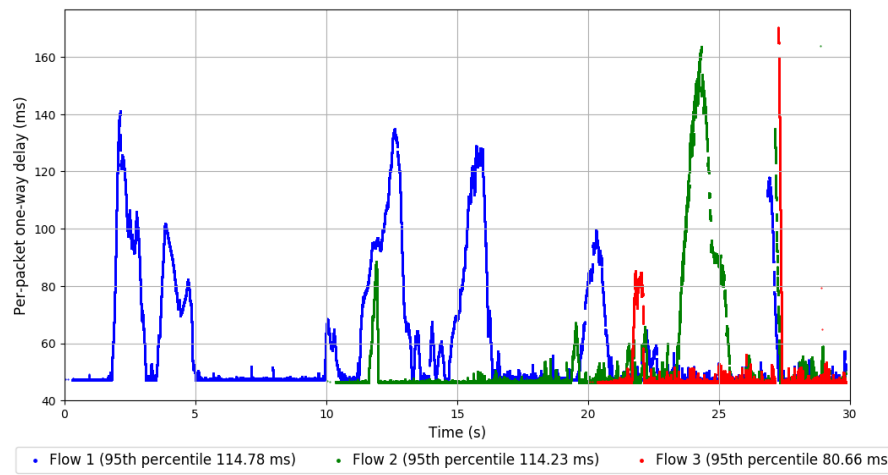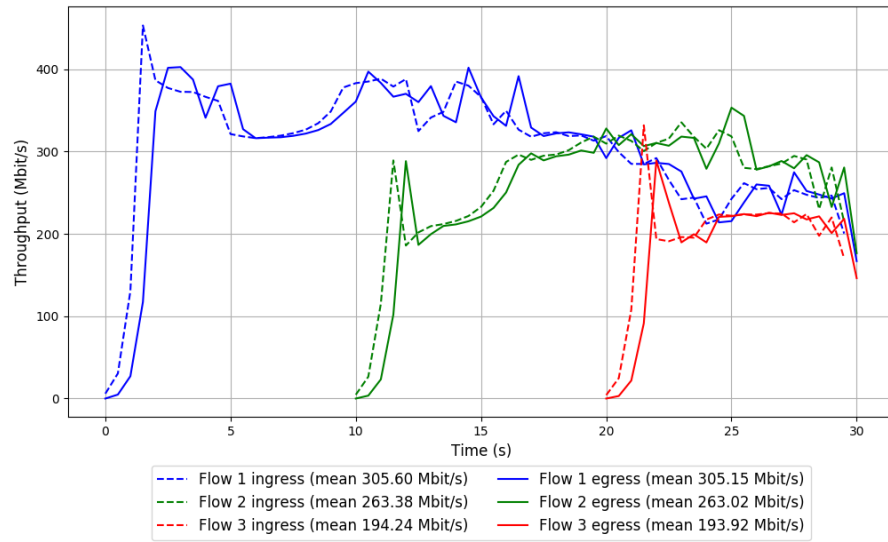Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2018-12-01 05:34:23
End at: 2018-12-01 05:34:53
Local clock offset: -0.167 ms
Remote clock offset: -0.001 ms


# Below is generated by plot.py at 2018-12-01 09:27:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 536.84 Mbit/s
95th percentile per-packet one-way delay: 143.707 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 303.79 Mbit/s
95th percentile per-packet one-way delay: 155.247 ms
Loss rate: 1.56%
-- Flow 2:
Average throughput: 251.39 Mbit/s
95th percentile per-packet one-way delay: 118.446 ms
Loss rate: 1.52%
-- Flow 3:
Average throughput: 201.32 Mbit/s
95th percentile per-packet one-way delay: 55.094 ms
Loss rate: 1.10%
```
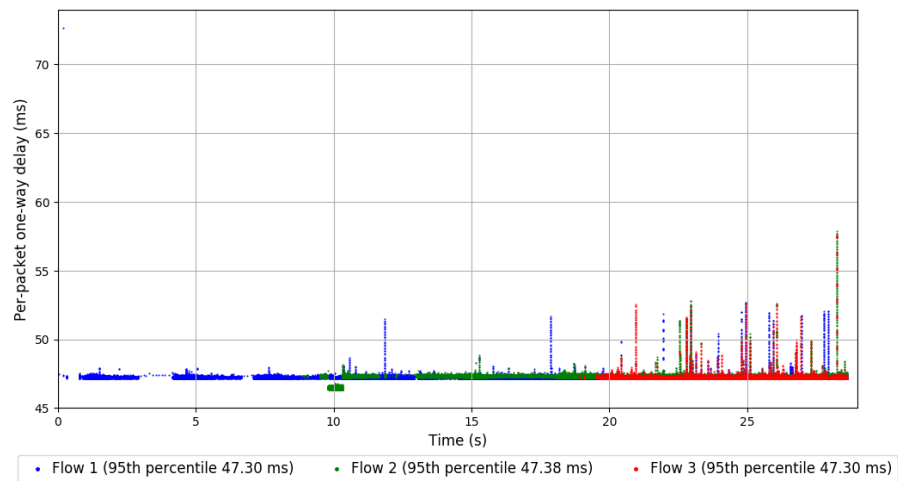
Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 307.62 Mbit/s) --- Flow 1 egress (mean 303.79 Mbit/s)
Flow 2 ingress (mean 254.06 Mbit/s) --- Flow 2 egress (mean 251.39 Mbit/s)
Flow 3 ingress (mean 201.60 Mbit/s) --- Flow 3 egress (mean 201.32 Mbit/s)

Flow 1 (95th percentile 155.25 ms)   Flow 2 (95th percentile 118.45 ms)   Flow 3 (95th percentile 55.09 ms)

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```
Run 4: Statistics of PCC-Expr

Start at: 2018-12-01 06:07:25
End at: 2018-12-01 06:07:55
Local clock offset: -0.129 ms
Remote clock offset: -0.069 ms


# Below is generated by plot.py at 2018-12-01 09:30:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 509.50 Mbit/s
95th percentile per-packet one-way delay: 128.821 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 306.72 Mbit/s
95th percentile per-packet one-way delay: 98.778 ms
Loss rate: 0.65%
-- Flow 2:
Average throughput: 287.19 Mbit/s
95th percentile per-packet one-way delay: 142.193 ms
Loss rate: 1.39%
-- Flow 3:
Average throughput: 36.83 Mbit/s
95th percentile per-packet one-way delay: 46.708 ms
Loss rate: 1.32%
```

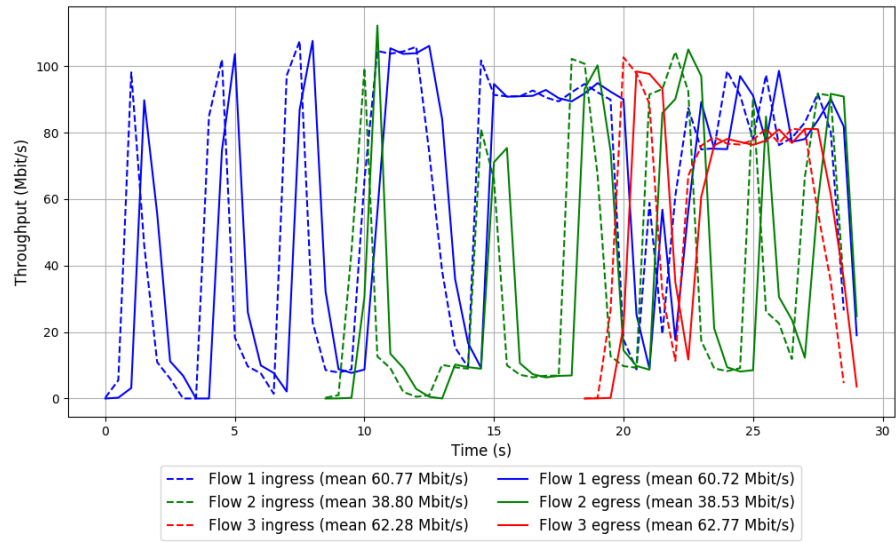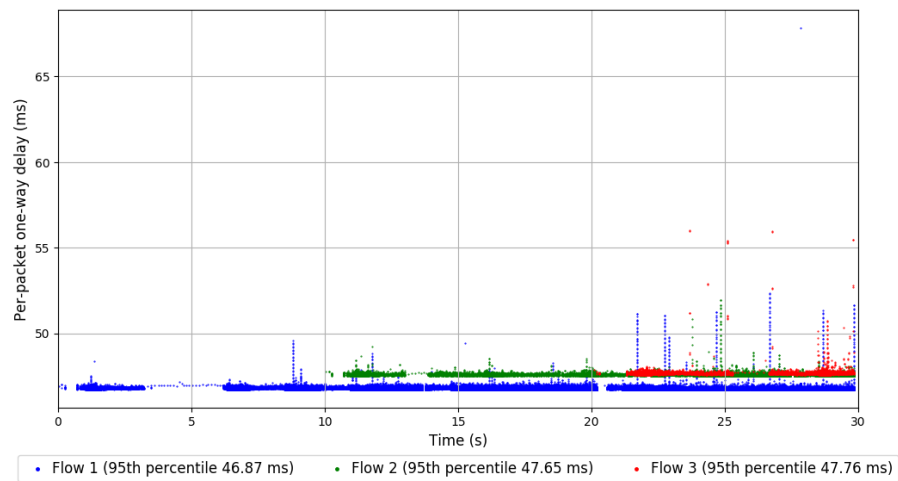Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2018-12-01 06:40:31
End at: 2018-12-01 06:41:01
Local clock offset: -0.049 ms
Remote clock offset: -0.096 ms


# Below is generated by plot.py at 2018-12-01 09:33:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 543.40 Mbit/s
95th percentile per-packet one-way delay: 112.148 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 305.15 Mbit/s
95th percentile per-packet one-way delay: 114.779 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 263.02 Mbit/s
95th percentile per-packet one-way delay: 114.230 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 193.92 Mbit/s
95th percentile per-packet one-way delay: 80.658 ms
Loss rate: 1.13%
```

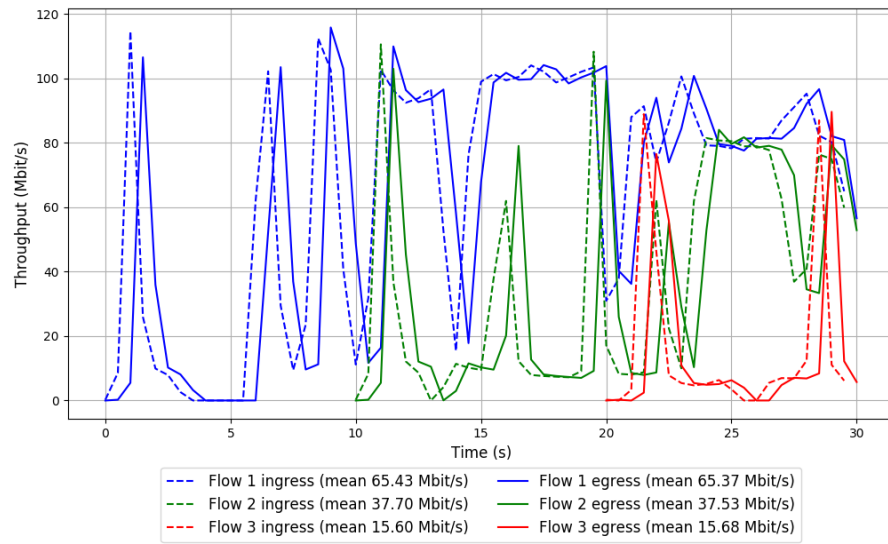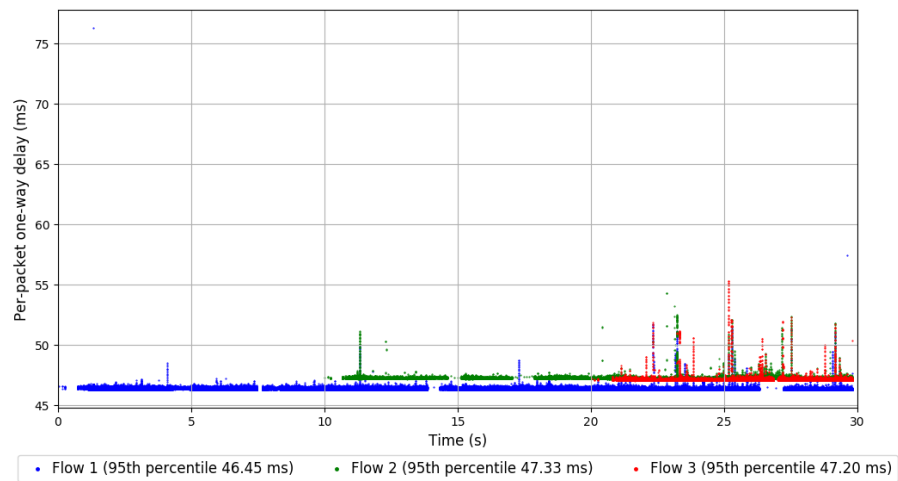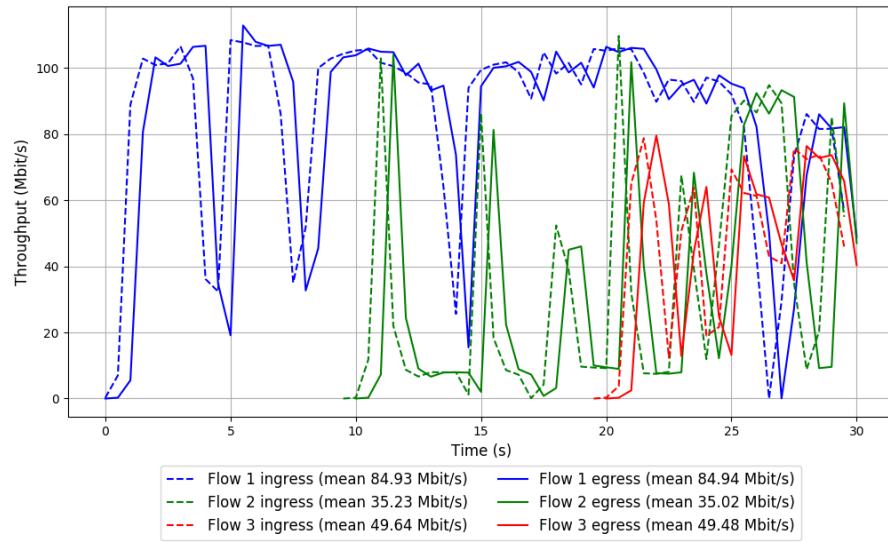# Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-12-01 04:32:00
End at: 2018-12-01 04:32:30
Local clock offset: -0.079 ms
Remote clock offset: -0.063 ms


# Below is generated by plot.py at 2018-12-01 09:33:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 108.84 Mbit/s
95th percentile per-packet one-way delay: 47.338 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 60.72 Mbit/s
95th percentile per-packet one-way delay: 47.295 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 38.53 Mbit/s
95th percentile per-packet one-way delay: 47.385 ms
Loss rate: 1.17%
-- Flow 3:
Average throughput: 62.77 Mbit/s
95th percentile per-packet one-way delay: 47.300 ms
Loss rate: 0.19%
```

Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-12-01 05:05:00
End at: 2018-12-01 05:05:30
Local clock offset: 0.246 ms
Remote clock offset: -0.102 ms


# Below is generated by plot.py at 2018-12-01 09:33:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.44 Mbit/s
95th percentile per-packet one-way delay: 47.633 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 65.37 Mbit/s
95th percentile per-packet one-way delay: 46.871 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 37.53 Mbit/s
95th percentile per-packet one-way delay: 47.648 ms
Loss rate: 0.94%
-- Flow 3:
Average throughput: 15.68 Mbit/s
95th percentile per-packet one-way delay: 47.761 ms
Loss rate: 0.43%
```
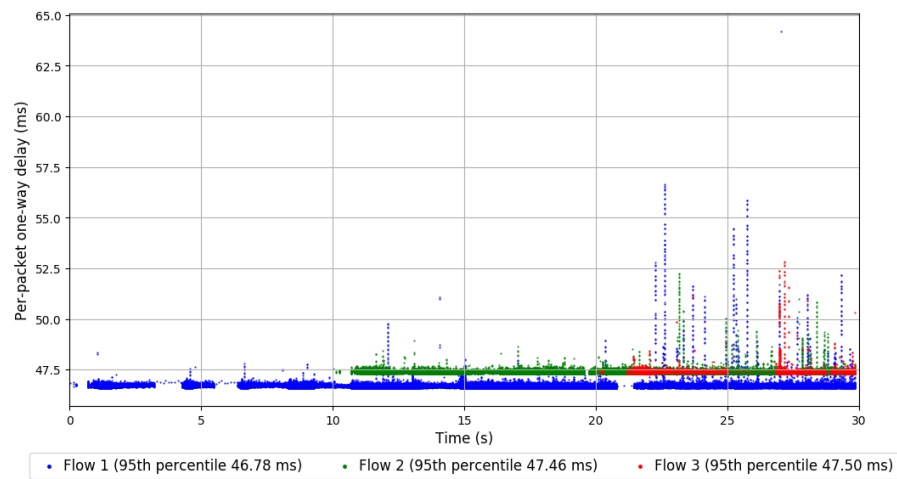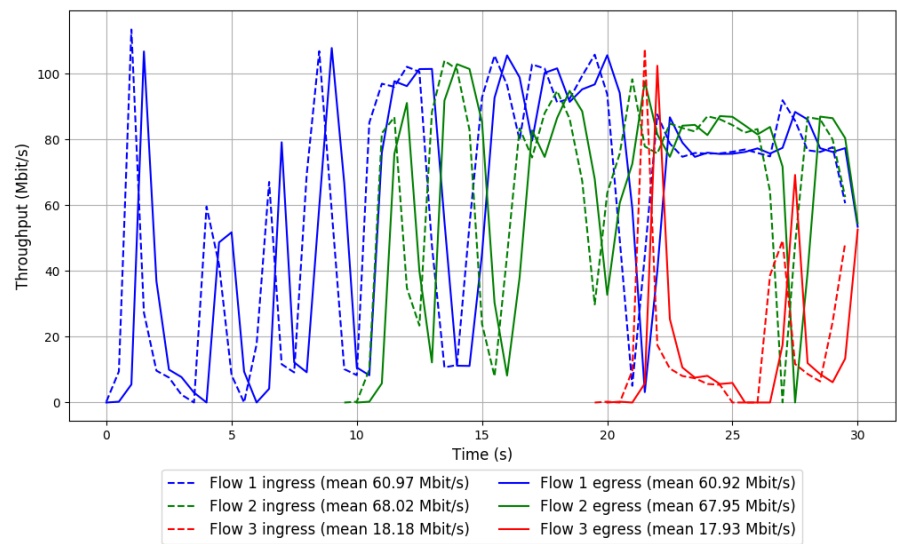
Run 2: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 65.43 Mbit/s) --- Flow 1 egress (mean 65.37 Mbit/s)
Flow 2 ingress (mean 37.70 Mbit/s) --- Flow 2 egress (mean 37.53 Mbit/s)
Flow 3 ingress (mean 15.60 Mbit/s) --- Flow 3 egress (mean 15.68 Mbit/s)

Flow 1 (95th percentile 46.87 ms)   Flow 2 (95th percentile 47.65 ms)   Flow 3 (95th percentile 47.76 ms)
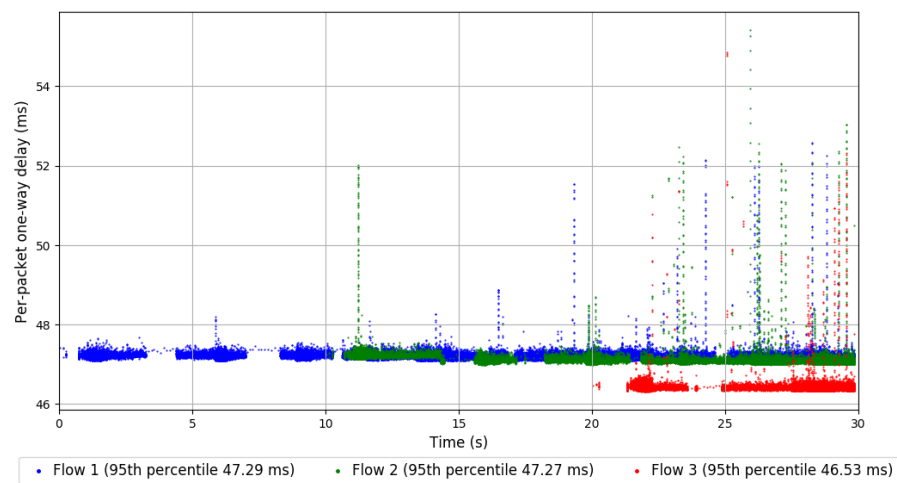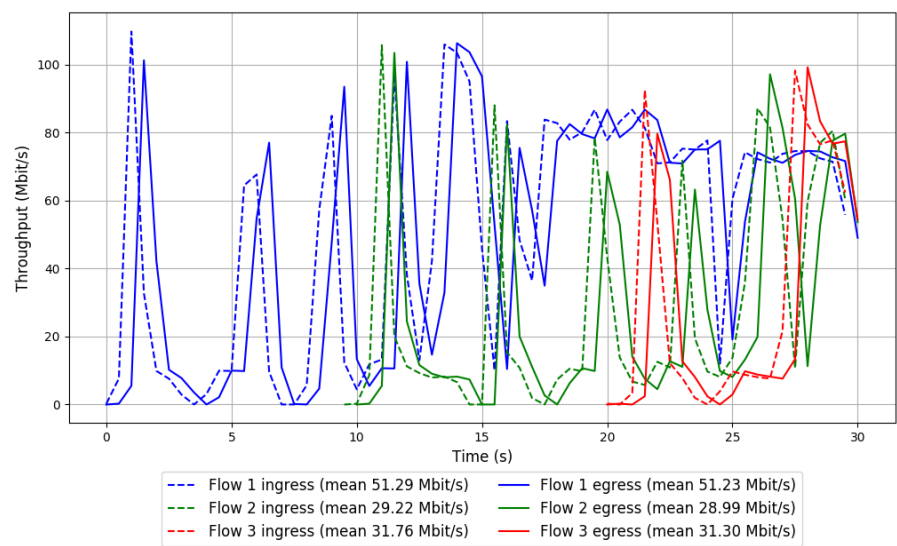
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```
Run 3: Statistics of QUIC Cubic

Start at: 2018-12-01 05:38:13
End at: 2018-12-01 05:38:44
Local clock offset: -0.176 ms
Remote clock offset: -0.046 ms


# Below is generated by plot.py at 2018-12-01 09:33:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 124.47 Mbit/s
95th percentile per-packet one-way delay: 47.257 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 84.94 Mbit/s
95th percentile per-packet one-way delay: 46.453 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 35.02 Mbit/s
95th percentile per-packet one-way delay: 47.334 ms
Loss rate: 1.09%
-- Flow 3:
Average throughput: 49.48 Mbit/s
95th percentile per-packet one-way delay: 47.198 ms
Loss rate: 1.22%
```
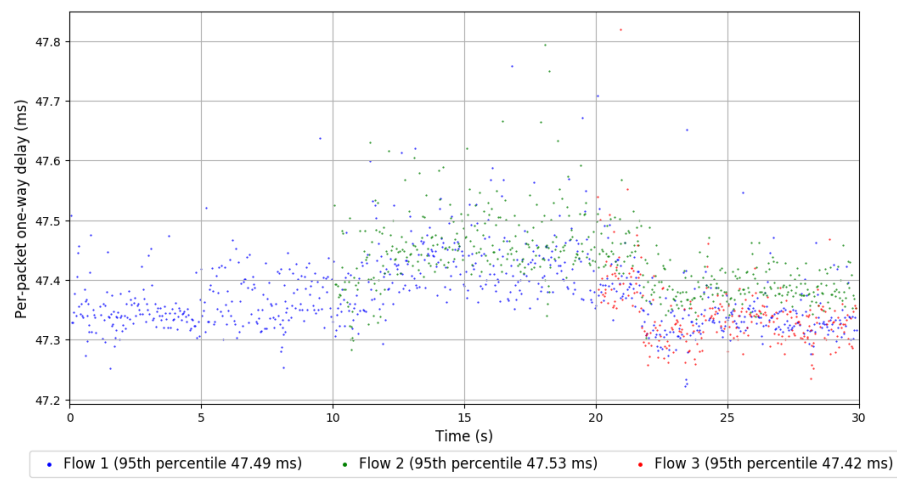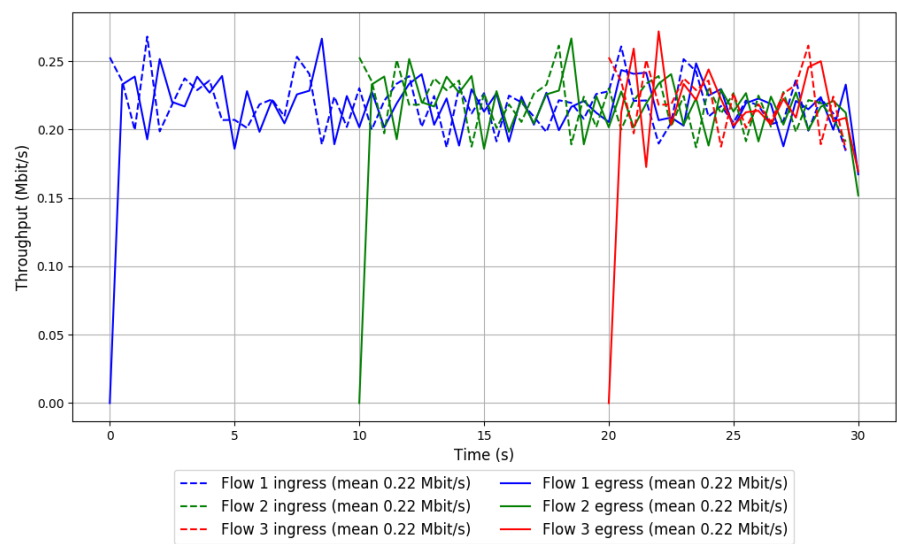
Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 84.93 Mbit/s) — Flow 1 egress (mean 84.94 Mbit/s)
Flow 2 ingress (mean 35.23 Mbit/s) — Flow 2 egress (mean 35.02 Mbit/s)
Flow 3 ingress (mean 49.64 Mbit/s) — Flow 3 egress (mean 49.48 Mbit/s)

Flow 1 (95th percentile 46.45 ms) · Flow 2 (95th percentile 47.33 ms) · Flow 3 (95th percentile 47.20 ms)

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-12-01 06:11:20
End at: 2018-12-01 06:11:50
Local clock offset: 0.247 ms
Remote clock offset: -0.051 ms


# Below is generated by plot.py at 2018-12-01 09:33:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 111.97 Mbit/s
95th percentile per-packet one-way delay: 47.430 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 60.92 Mbit/s
95th percentile per-packet one-way delay: 46.785 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 67.95 Mbit/s
95th percentile per-packet one-way delay: 47.460 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 17.93 Mbit/s
95th percentile per-packet one-way delay: 47.501 ms
Loss rate: 2.30%
```
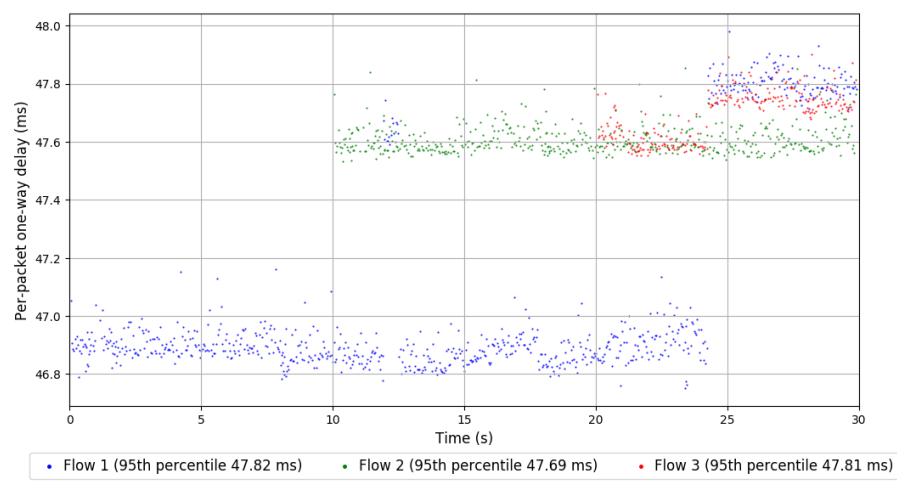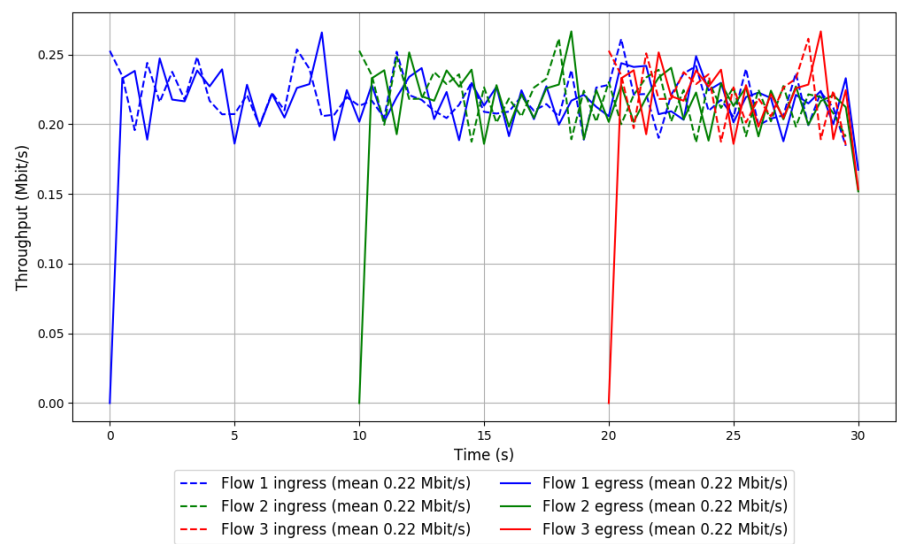
Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-12-01 06:44:25
End at: 2018-12-01 06:44:55
Local clock offset: -0.07 ms
Remote clock offset: -0.103 ms


# Below is generated by plot.py at 2018-12-01 09:33:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.78 Mbit/s
95th percentile per-packet one-way delay: 47.278 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 51.23 Mbit/s
95th percentile per-packet one-way delay: 47.288 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 28.99 Mbit/s
95th percentile per-packet one-way delay: 47.271 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 31.30 Mbit/s
95th percentile per-packet one-way delay: 46.526 ms
Loss rate: 2.41%
```

Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 51.29 Mbit/s)   Flow 1 egress (mean 51.23 Mbit/s)
Flow 2 ingress (mean 29.22 Mbit/s)   Flow 2 egress (mean 28.99 Mbit/s)
Flow 3 ingress (mean 31.76 Mbit/s)   Flow 3 egress (mean 31.30 Mbit/s)

Flow 1 (95th percentile 47.29 ms)   Flow 2 (95th percentile 47.27 ms)   Flow 3 (95th percentile 46.53 ms)
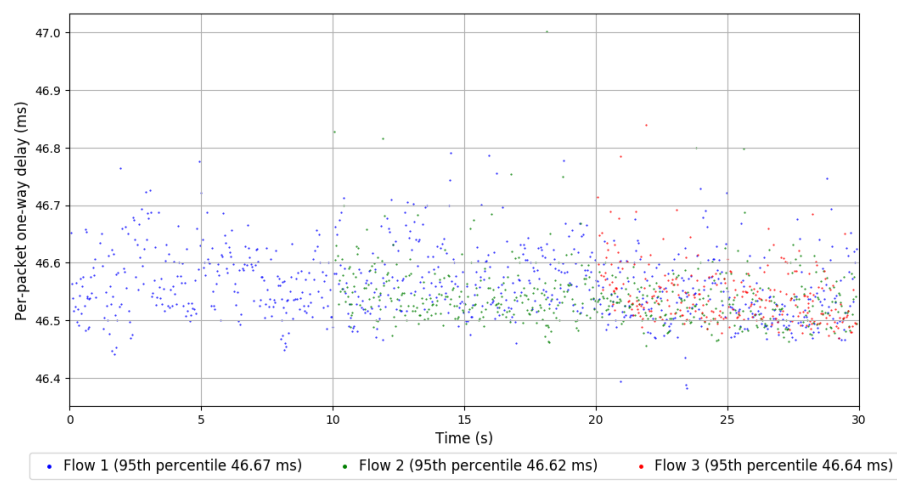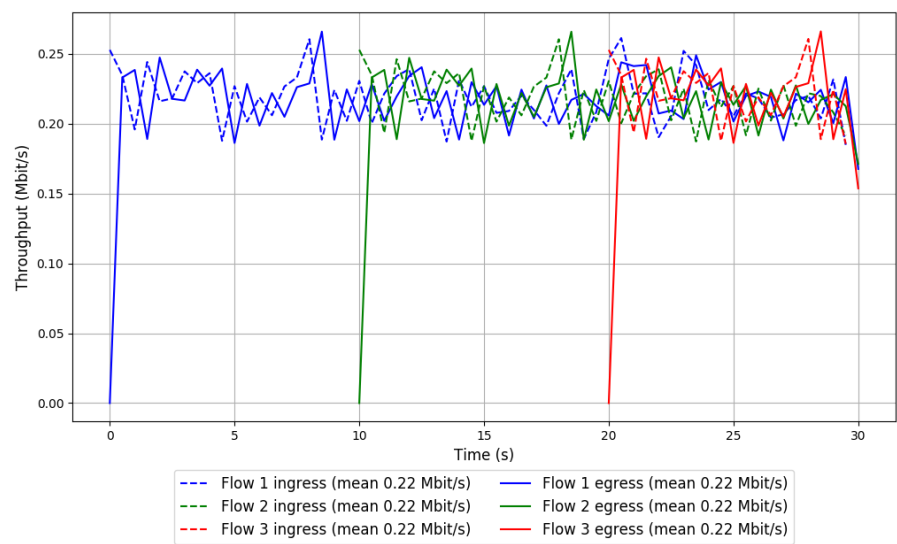
```
Run 1: Statistics of SCReAM

Start at: 2018-12-01 04:37:34
End at: 2018-12-01 04:38:04
Local clock offset: -0.115 ms
Remote clock offset: -0.048 ms

# Below is generated by plot.py at 2018-12-01 09:33:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 47.508 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.487 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.530 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.424 ms
Loss rate: 1.09%
```
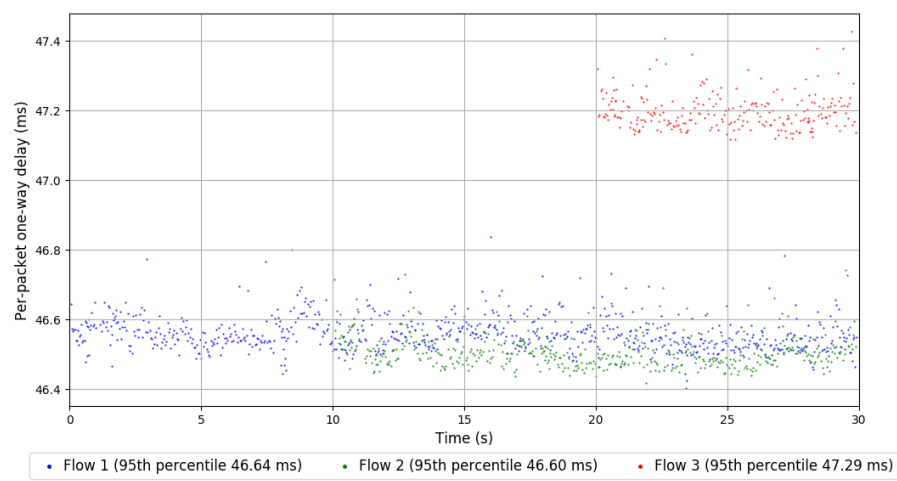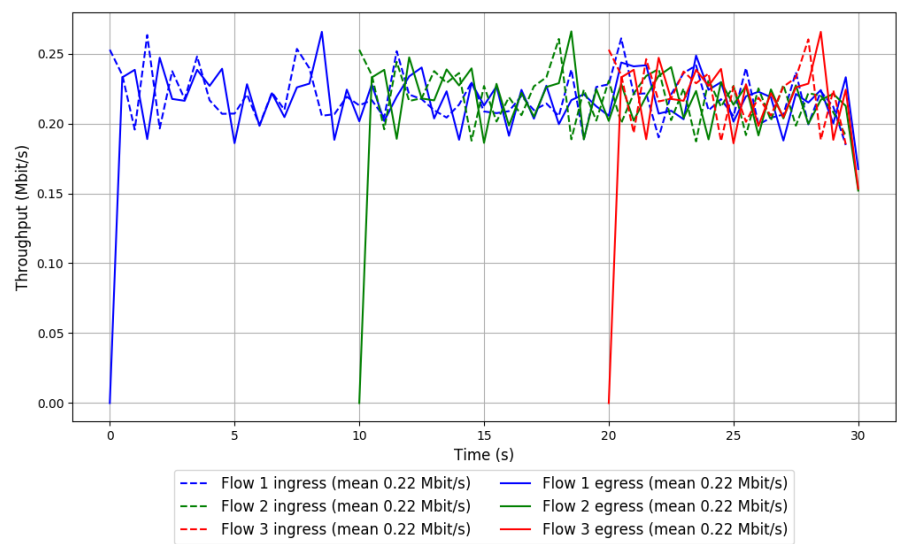
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-12-01 05:10:29
End at: 2018-12-01 05:10:59
Local clock offset: 0.259 ms
Remote clock offset: -0.087 ms


# Below is generated by plot.py at 2018-12-01 09:33:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 47.808 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.822 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.692 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.813 ms
Loss rate: 1.09%
```
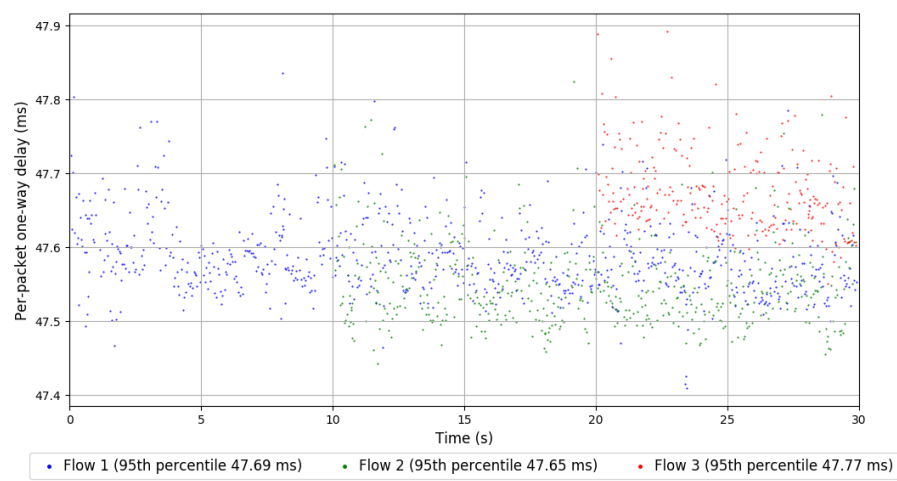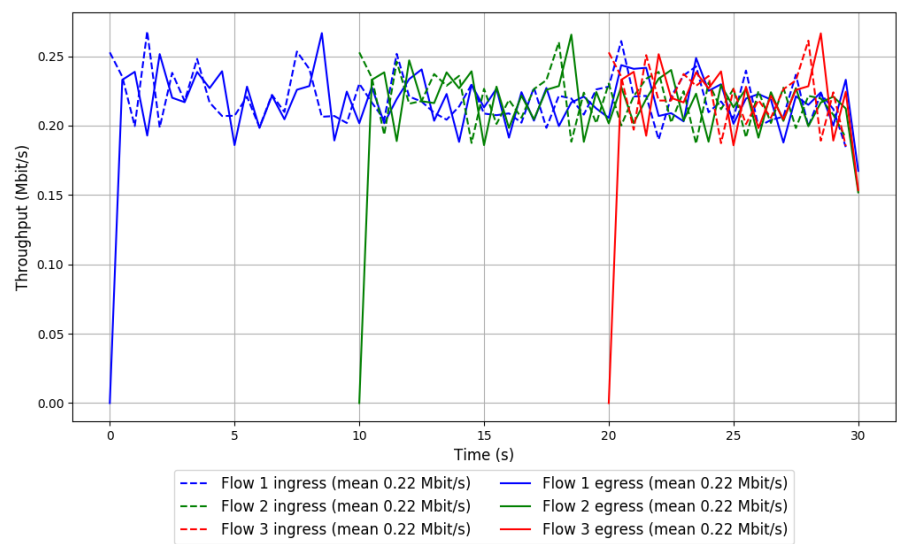
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-12-01 05:43:44
End at: 2018-12-01 05:44:14
Local clock offset: -0.171 ms
Remote clock offset: -0.041 ms


# Below is generated by plot.py at 2018-12-01 09:33:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 46.660 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.675 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.621 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.642 ms
Loss rate: 1.09%
```

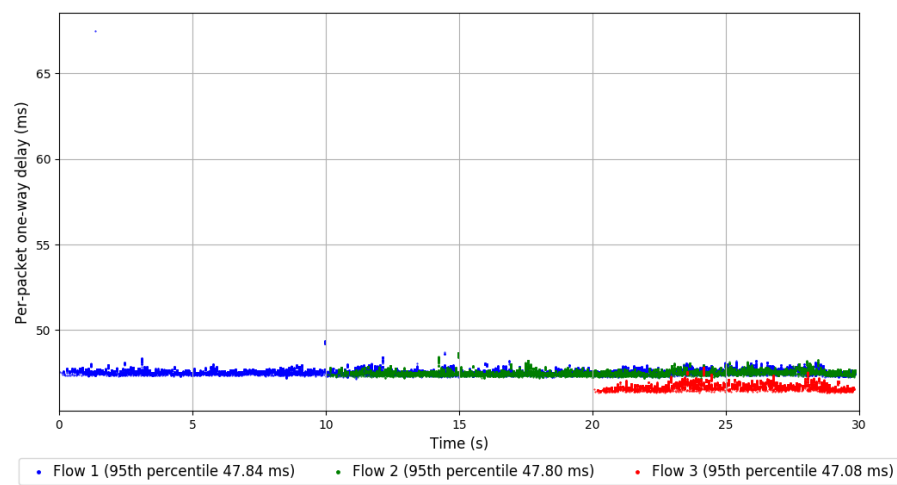# Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-12-01 06:16:52
End at: 2018-12-01 06:17:22
Local clock offset: -0.104 ms
Remote clock offset: -0.11 ms


# Below is generated by plot.py at 2018-12-01 09:33:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 47.214 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.642 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.599 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.292 ms
Loss rate: 1.09%
```
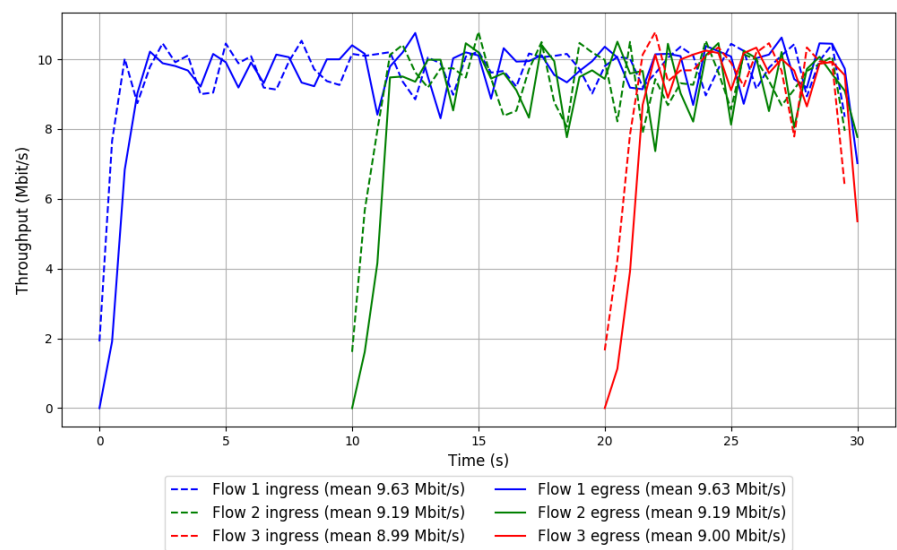
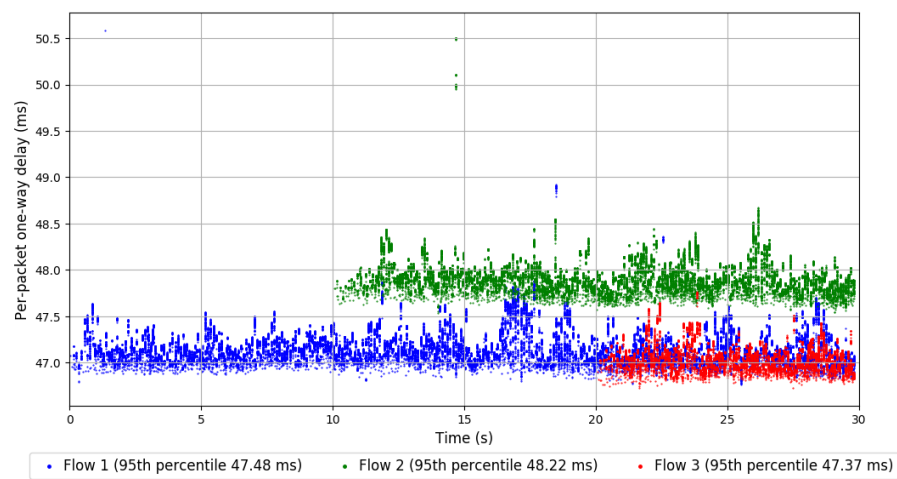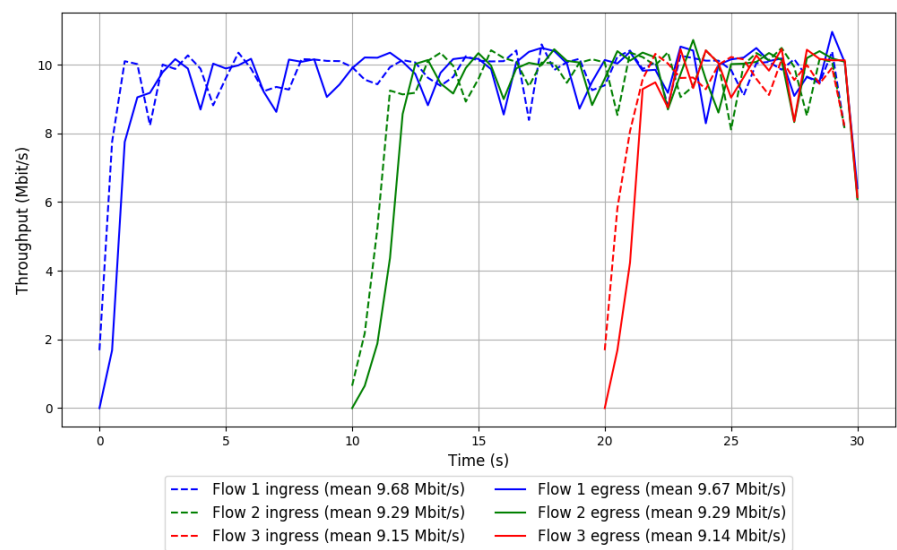# Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-12-01 06:49:59
End at: 2018-12-01 06:50:29
Local clock offset: 0.295 ms
Remote clock offset: -0.085 ms


# Below is generated by plot.py at 2018-12-01 09:33:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 47.713 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.686 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.653 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.771 ms
Loss rate: 1.09%
```

Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-12-01 04:23:29
End at: 2018-12-01 04:23:59
Local clock offset: -0.116 ms
Remote clock offset: -0.033 ms


# Below is generated by plot.py at 2018-12-01 09:33:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.67 Mbit/s
95th percentile per-packet one-way delay: 47.803 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 9.63 Mbit/s
95th percentile per-packet one-way delay: 47.835 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 9.19 Mbit/s
95th percentile per-packet one-way delay: 47.799 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 9.00 Mbit/s
95th percentile per-packet one-way delay: 47.083 ms
Loss rate: 1.14%
```
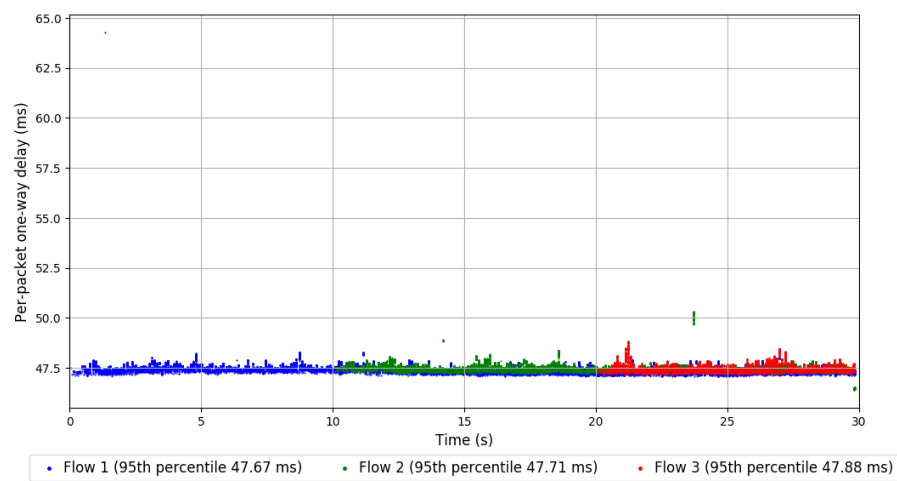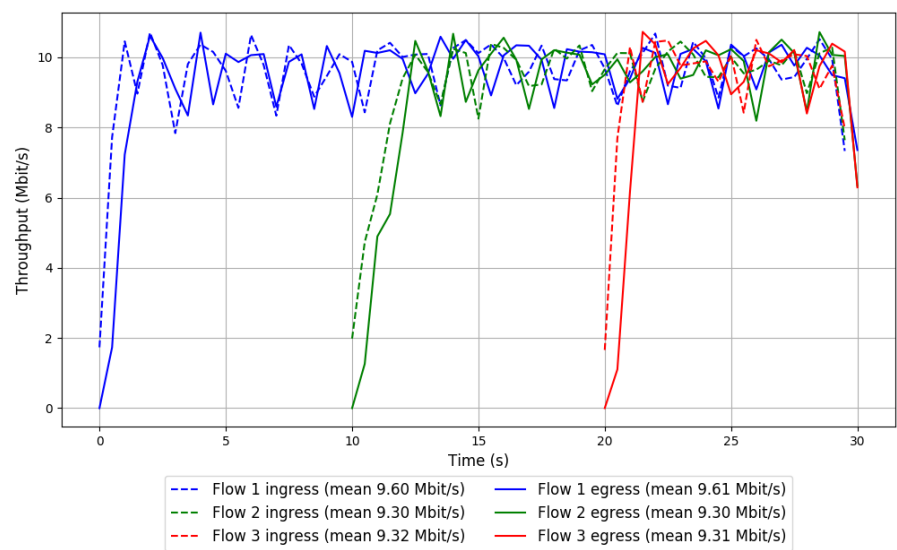
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-12-01 04:56:32
End at: 2018-12-01 04:57:02
Local clock offset: 0.28 ms
Remote clock offset: -0.054 ms


# Below is generated by plot.py at 2018-12-01 09:33:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.83 Mbit/s
95th percentile per-packet one-way delay: 48.044 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 9.67 Mbit/s
95th percentile per-packet one-way delay: 47.483 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 9.29 Mbit/s
95th percentile per-packet one-way delay: 48.218 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 9.14 Mbit/s
95th percentile per-packet one-way delay: 47.365 ms
Loss rate: 1.13%
```
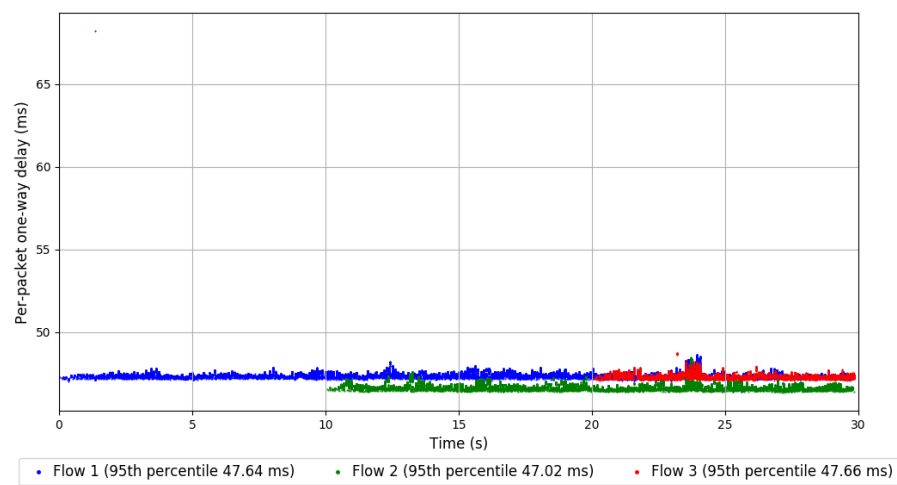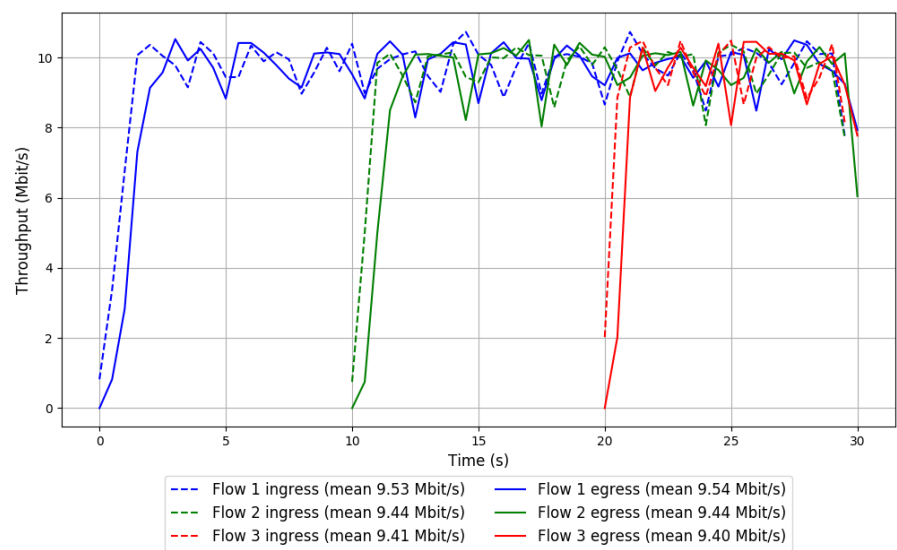
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-12-01 05:29:34
End at: 2018-12-01 05:30:04
Local clock offset: -0.154 ms
Remote clock offset: -0.018 ms

# Below is generated by plot.py at 2018-12-01 09:33:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.83 Mbit/s
95th percentile per-packet one-way delay: 47.715 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 9.61 Mbit/s
95th percentile per-packet one-way delay: 47.671 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 9.30 Mbit/s
95th percentile per-packet one-way delay: 47.711 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 9.31 Mbit/s
95th percentile per-packet one-way delay: 47.876 ms
Loss rate: 1.07%
```
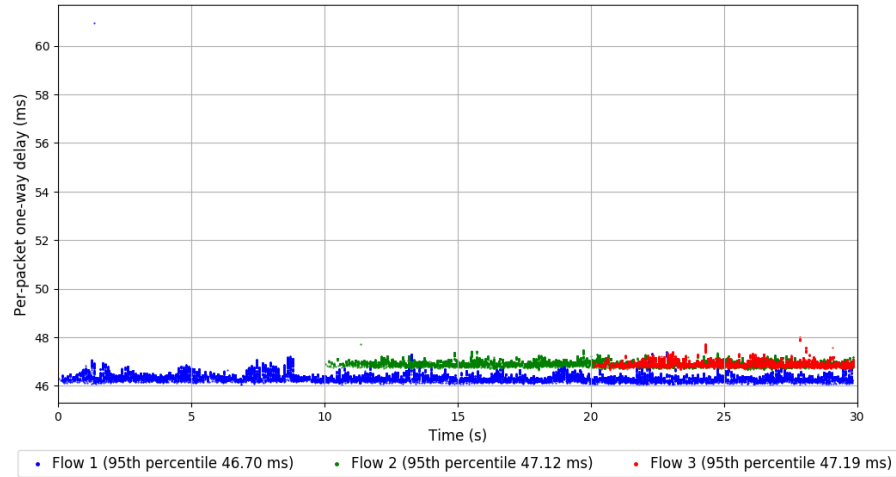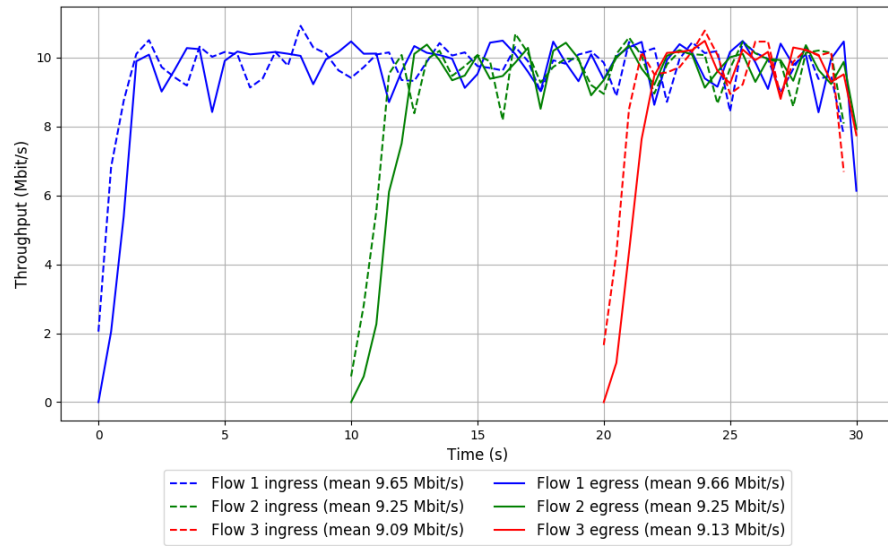
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-12-01 06:02:31
End at: 2018-12-01 06:03:01
Local clock offset: -0.164 ms
Remote clock offset: -0.033 ms


# Below is generated by plot.py at 2018-12-01 09:33:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.89 Mbit/s
95th percentile per-packet one-way delay: 47.591 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 9.54 Mbit/s
95th percentile per-packet one-way delay: 47.640 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 9.44 Mbit/s
95th percentile per-packet one-way delay: 47.017 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 9.40 Mbit/s
95th percentile per-packet one-way delay: 47.656 ms
Loss rate: 0.93%
```
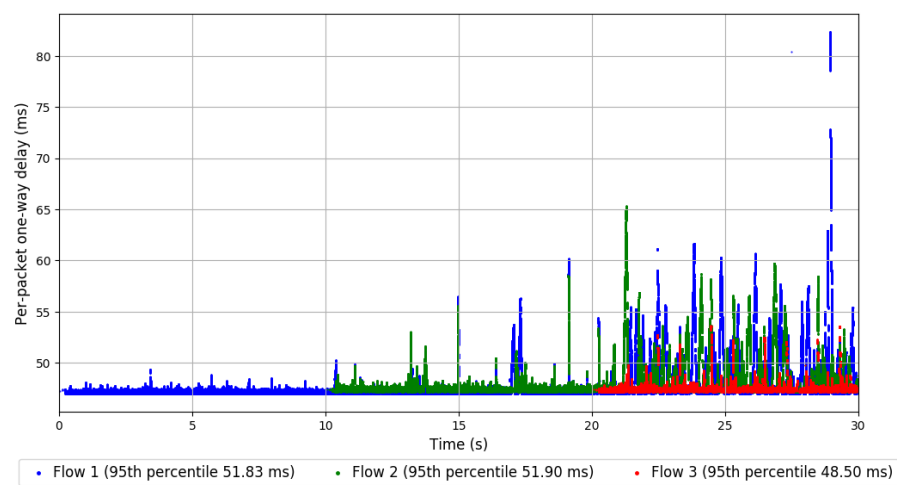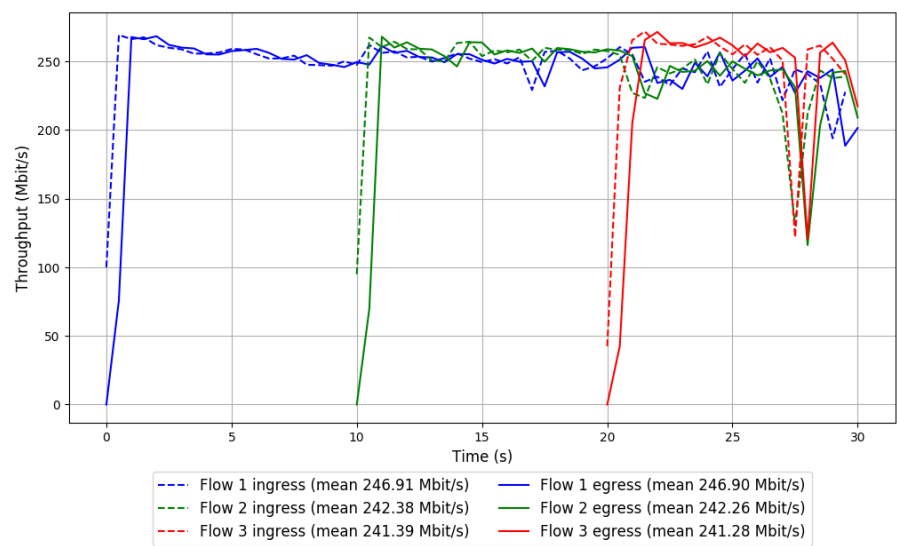
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-12-01 06:35:41
End at: 2018-12-01 06:36:11
Local clock offset: -0.455 ms
Remote clock offset: -0.088 ms


# Below is generated by plot.py at 2018-12-01 09:33:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.79 Mbit/s
95th percentile per-packet one-way delay: 47.085 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 9.66 Mbit/s
95th percentile per-packet one-way delay: 46.698 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 9.25 Mbit/s
95th percentile per-packet one-way delay: 47.121 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 9.13 Mbit/s
95th percentile per-packet one-way delay: 47.188 ms
Loss rate: 0.38%
```
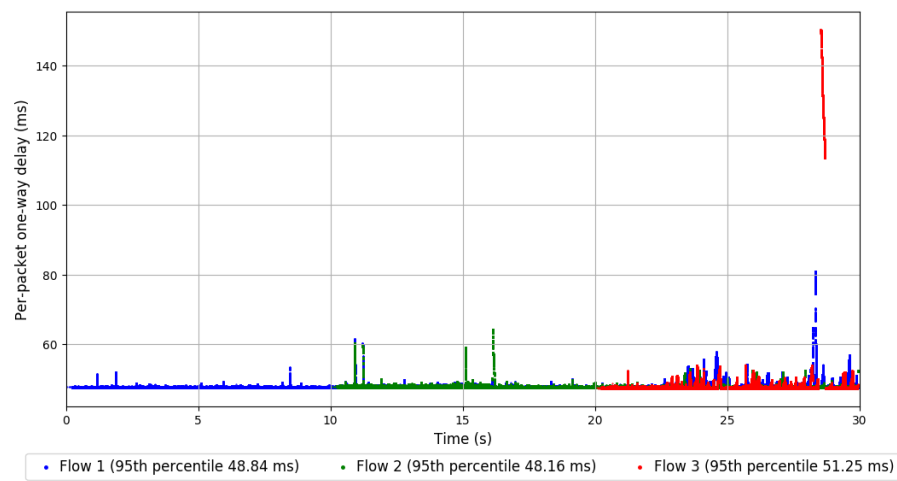
Run 5: Report of Sprout — Data Link

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```
Run 1: Statistics of TaoVA-100x

Start at: 2018-12-01 04:26:20
End at: 2018-12-01 04:26:50
Local clock offset: -0.085 ms
Remote clock offset: -0.041 ms


# Below is generated by plot.py at 2018-12-01 09:40:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 487.64 Mbit/s
95th percentile per-packet one-way delay: 51.328 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 246.90 Mbit/s
95th percentile per-packet one-way delay: 51.832 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 242.26 Mbit/s
95th percentile per-packet one-way delay: 51.897 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 241.28 Mbit/s
95th percentile per-packet one-way delay: 48.497 ms
Loss rate: 1.00%
```

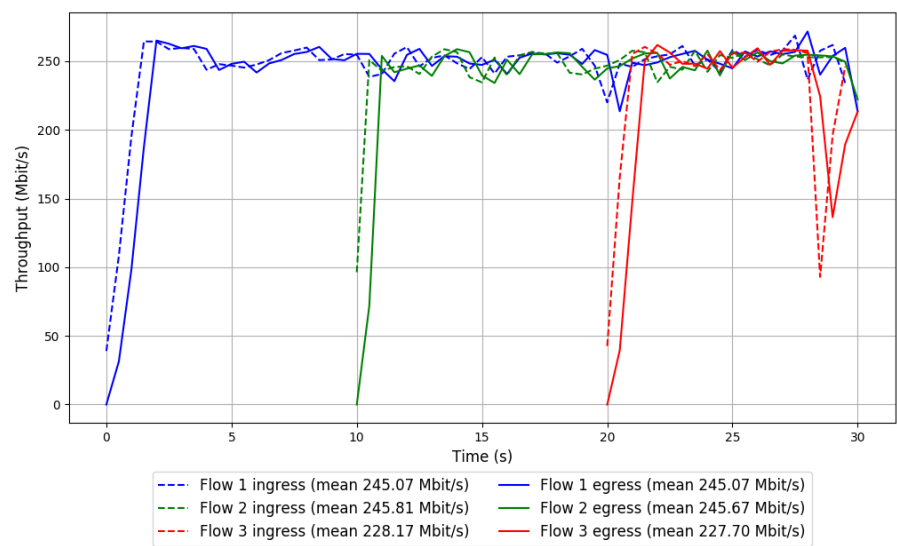Run 1: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 246.91 Mbit/s)   Flow 1 egress (mean 246.90 Mbit/s)
Flow 2 ingress (mean 242.38 Mbit/s)   Flow 2 egress (mean 242.26 Mbit/s)
Flow 3 ingress (mean 241.39 Mbit/s)   Flow 3 egress (mean 241.28 Mbit/s)

Flow 1 (95th percentile 51.83 ms)   Flow 2 (95th percentile 51.90 ms)   Flow 3 (95th percentile 48.50 ms)

```
Run 2: Statistics of TaoVA-100x

Start at: 2018-12-01 04:59:24
End at: 2018-12-01 04:59:54
Local clock offset: 0.237 ms
Remote clock offset: -0.043 ms


# Below is generated by plot.py at 2018-12-01 09:40:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 483.70 Mbit/s
95th percentile per-packet one-way delay: 48.957 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 245.07 Mbit/s
95th percentile per-packet one-way delay: 48.842 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 245.67 Mbit/s
95th percentile per-packet one-way delay: 48.157 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 227.70 Mbit/s
95th percentile per-packet one-way delay: 51.248 ms
Loss rate: 1.15%
```
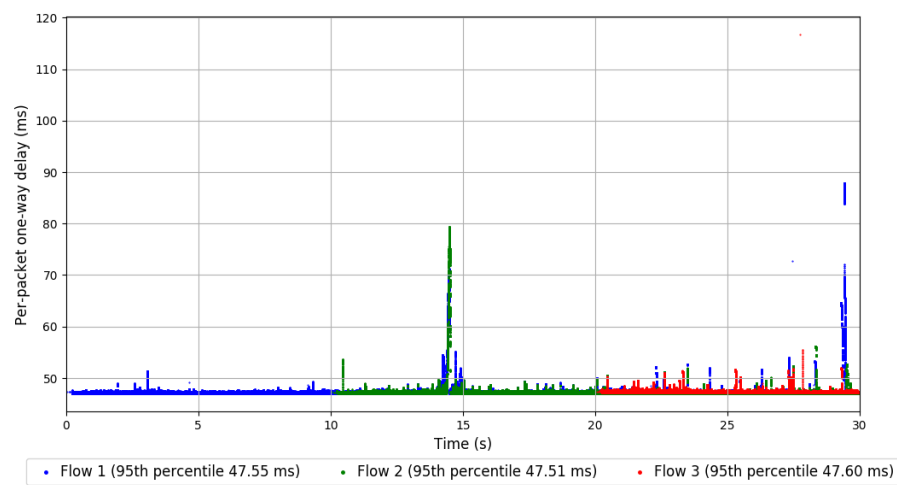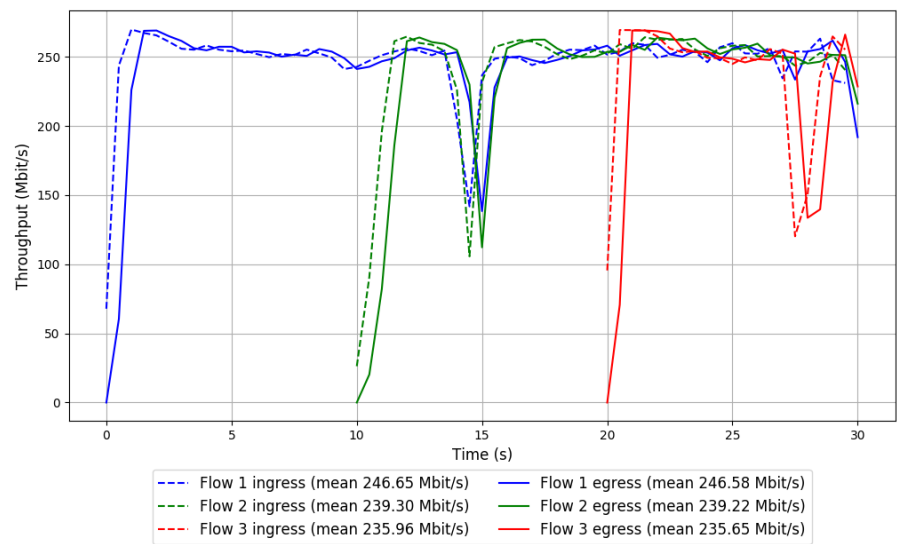
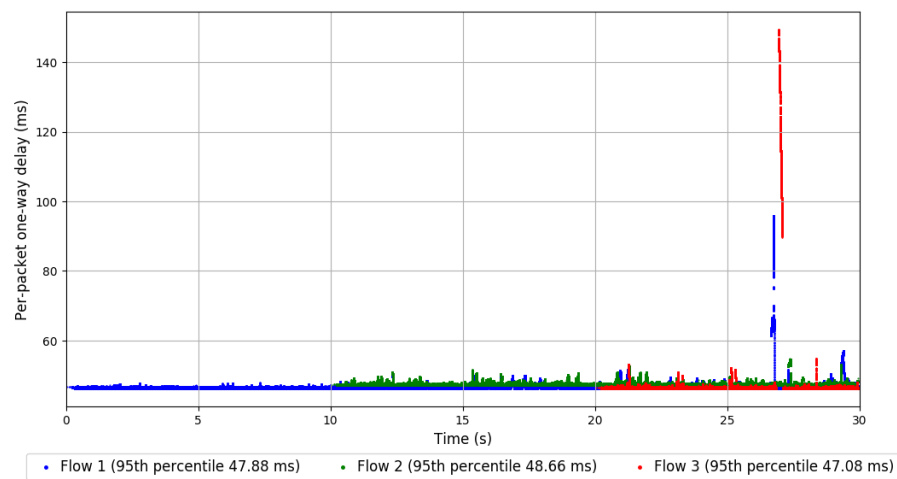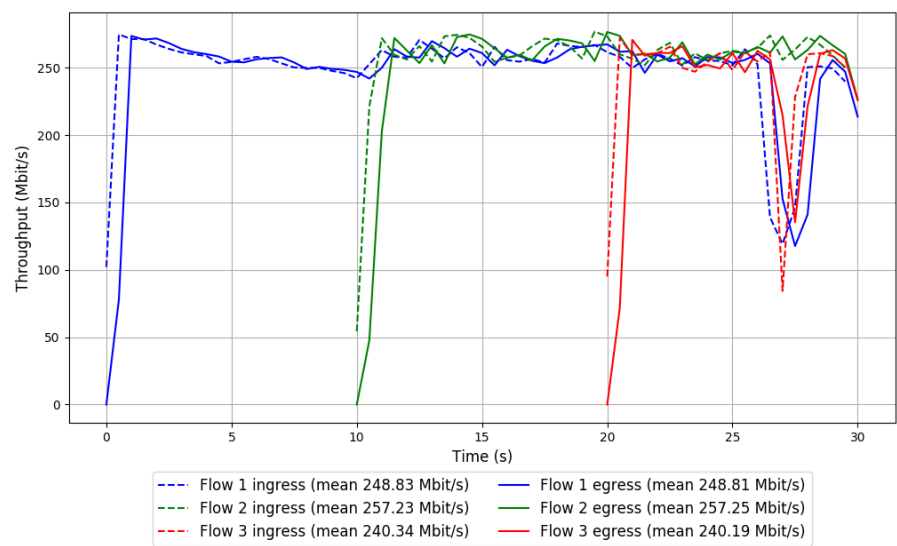Run 2: Report of TaoVA-100x — Data Link

```
Run 3: Statistics of TaoVA-100x

Start at: 2018-12-01 05:32:25
End at: 2018-12-01 05:32:55
Local clock offset: -0.176 ms
Remote clock offset: -0.038 ms


# Below is generated by plot.py at 2018-12-01 09:40:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 483.59 Mbit/s
95th percentile per-packet one-way delay: 47.552 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 246.58 Mbit/s
95th percentile per-packet one-way delay: 47.549 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 239.22 Mbit/s
95th percentile per-packet one-way delay: 47.510 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 235.65 Mbit/s
95th percentile per-packet one-way delay: 47.598 ms
Loss rate: 1.09%
```

Run 3: Report of TaoVA-100x — Data Link

- - - - Flow 1 ingress (mean 246.65 Mbit/s)   —— Flow 1 egress (mean 246.58 Mbit/s)
- - - - Flow 2 ingress (mean 239.30 Mbit/s)   —— Flow 2 egress (mean 239.22 Mbit/s)
- - - - Flow 3 ingress (mean 235.96 Mbit/s)   —— Flow 3 egress (mean 235.65 Mbit/s)

- Flow 1 (95th percentile 47.55 ms)   • Flow 2 (95th percentile 47.51 ms)   • Flow 3 (95th percentile 47.60 ms)
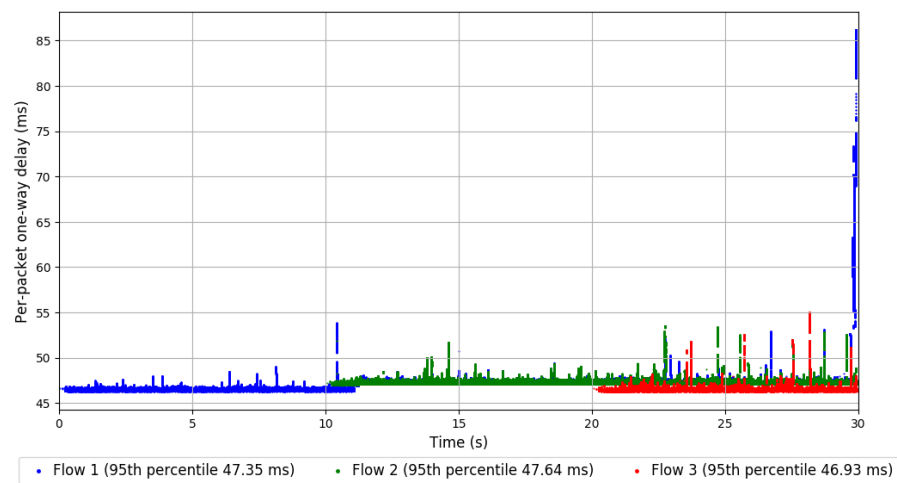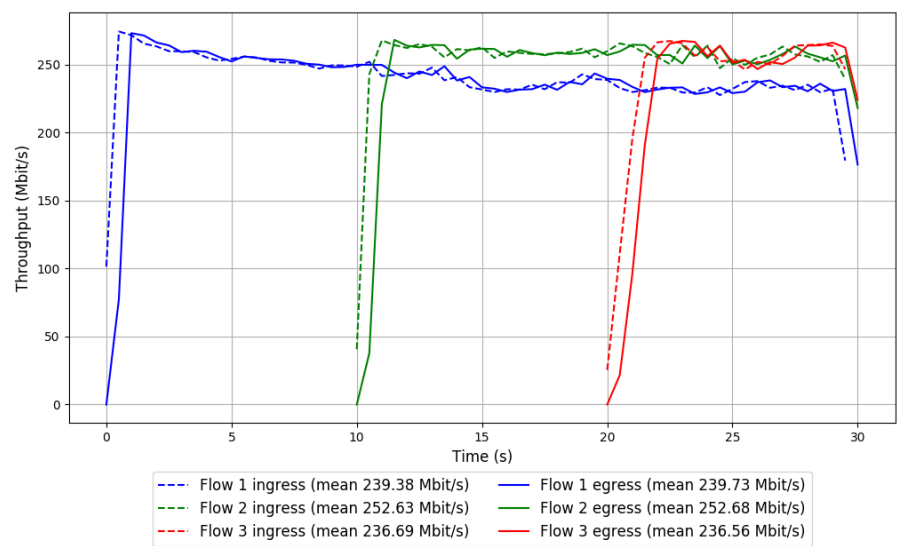
```
Run 4: Statistics of TaoVA-100x

Start at: 2018-12-01 06:05:22
End at: 2018-12-01 06:05:52
Local clock offset: -0.113 ms
Remote clock offset: -0.023 ms

# Below is generated by plot.py at 2018-12-01 09:41:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 499.29 Mbit/s
95th percentile per-packet one-way delay: 48.253 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 248.81 Mbit/s
95th percentile per-packet one-way delay: 47.885 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 257.25 Mbit/s
95th percentile per-packet one-way delay: 48.657 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 240.19 Mbit/s
95th percentile per-packet one-way delay: 47.081 ms
Loss rate: 1.02%
```

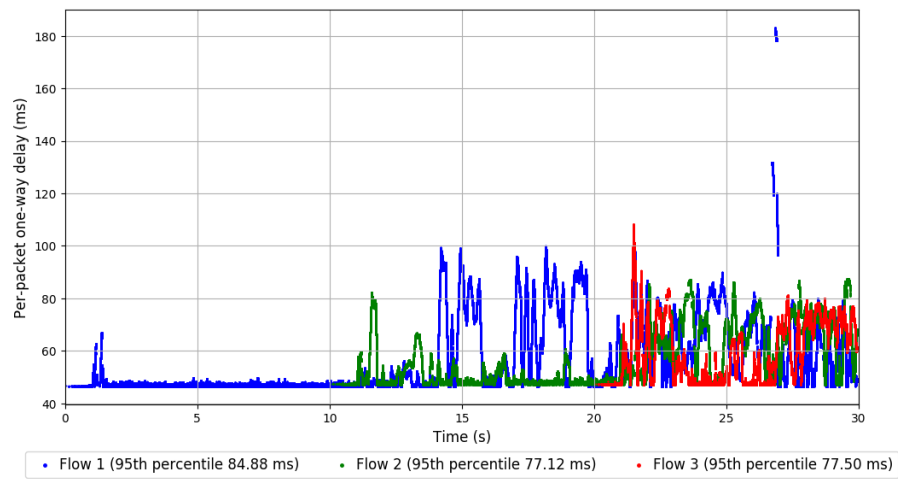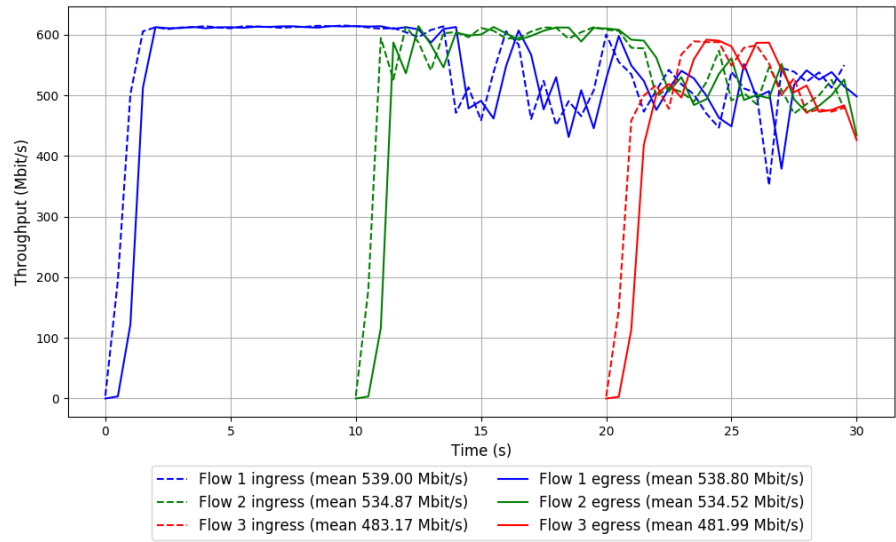Run 4: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 248.83 Mbit/s) --- Flow 1 egress (mean 248.81 Mbit/s)
Flow 2 ingress (mean 257.23 Mbit/s) --- Flow 2 egress (mean 257.25 Mbit/s)
Flow 3 ingress (mean 240.34 Mbit/s) --- Flow 3 egress (mean 240.19 Mbit/s)

Flow 1 (95th percentile 47.88 ms)   Flow 2 (95th percentile 48.66 ms)   Flow 3 (95th percentile 47.08 ms)
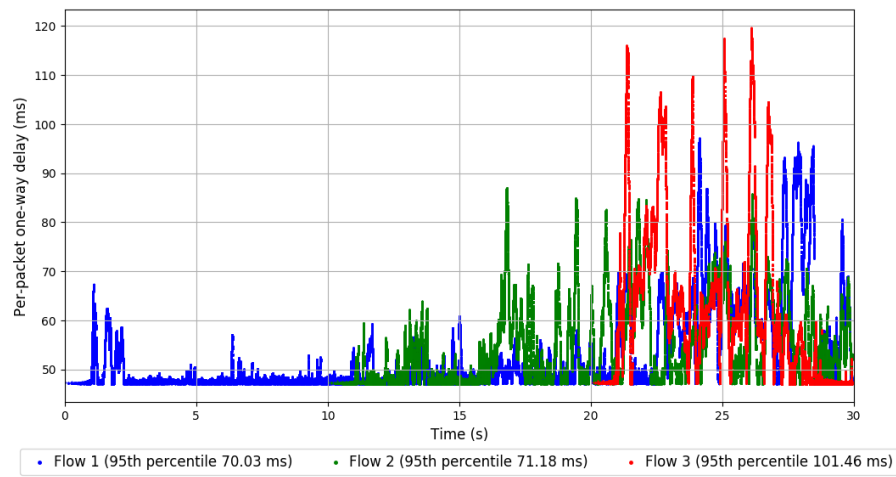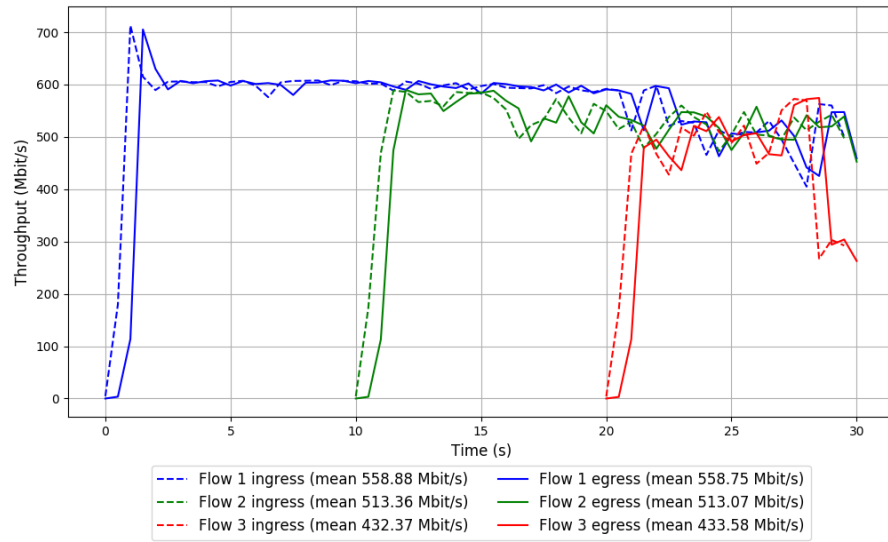
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```
Run 5: Statistics of TaoVA-100x

Start at: 2018-12-01 06:38:33
End at: 2018-12-01 06:39:03
Local clock offset: -0.078 ms
Remote clock offset: -0.053 ms


# Below is generated by plot.py at 2018-12-01 09:44:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 485.91 Mbit/s
95th percentile per-packet one-way delay: 47.462 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 239.73 Mbit/s
95th percentile per-packet one-way delay: 47.350 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 252.68 Mbit/s
95th percentile per-packet one-way delay: 47.638 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 236.56 Mbit/s
95th percentile per-packet one-way delay: 46.931 ms
Loss rate: 1.00%
```

Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 239.38 Mbit/s) --- Flow 1 egress (mean 239.73 Mbit/s)
Flow 2 ingress (mean 252.63 Mbit/s) --- Flow 2 egress (mean 252.68 Mbit/s)
Flow 3 ingress (mean 236.69 Mbit/s) --- Flow 3 egress (mean 236.56 Mbit/s)

Flow 1 (95th percentile 47.35 ms)   Flow 2 (95th percentile 47.64 ms)   Flow 3 (95th percentile 46.93 ms)

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```
Run 1: Statistics of TCP Vegas

Start at: 2018-12-01 04:45:59
End at: 2018-12-01 04:46:29
Local clock offset: -0.084 ms
Remote clock offset: -0.104 ms


# Below is generated by plot.py at 2018-12-01 09:48:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1053.44 Mbit/s
95th percentile per-packet one-way delay: 81.229 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 538.80 Mbit/s
95th percentile per-packet one-way delay: 84.880 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 534.52 Mbit/s
95th percentile per-packet one-way delay: 77.125 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 481.99 Mbit/s
95th percentile per-packet one-way delay: 77.505 ms
Loss rate: 1.18%
```

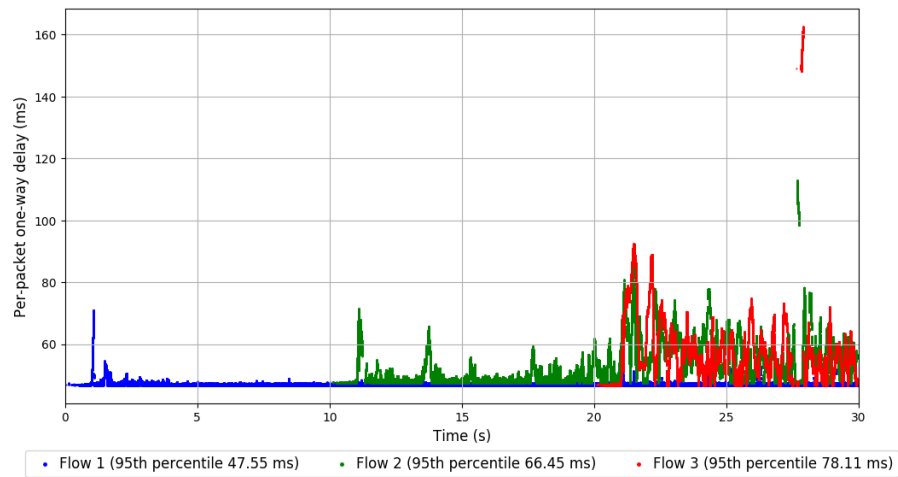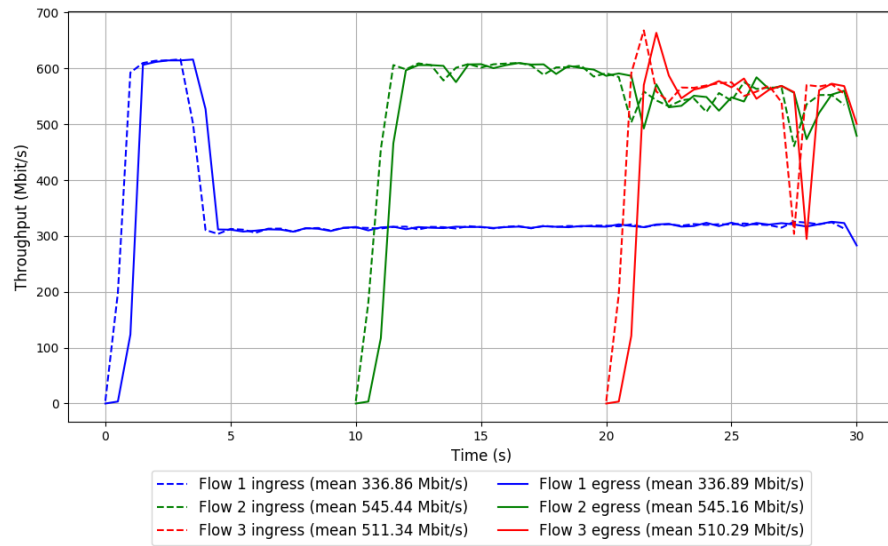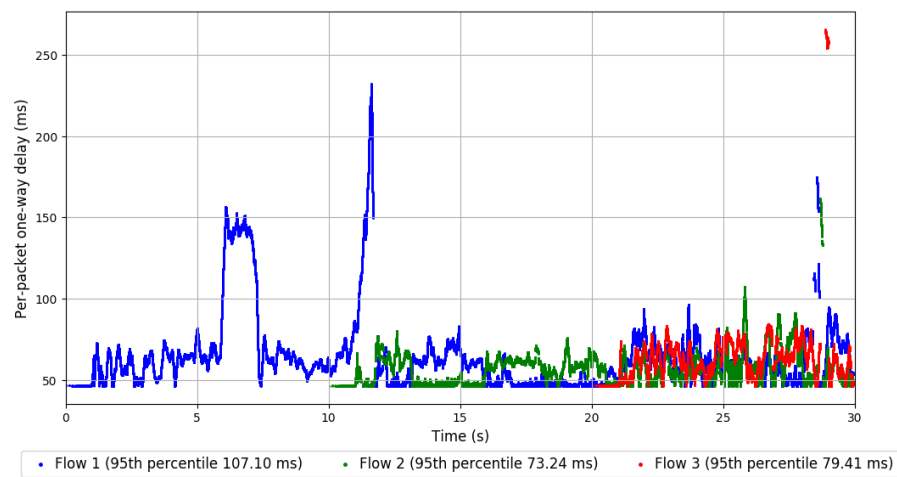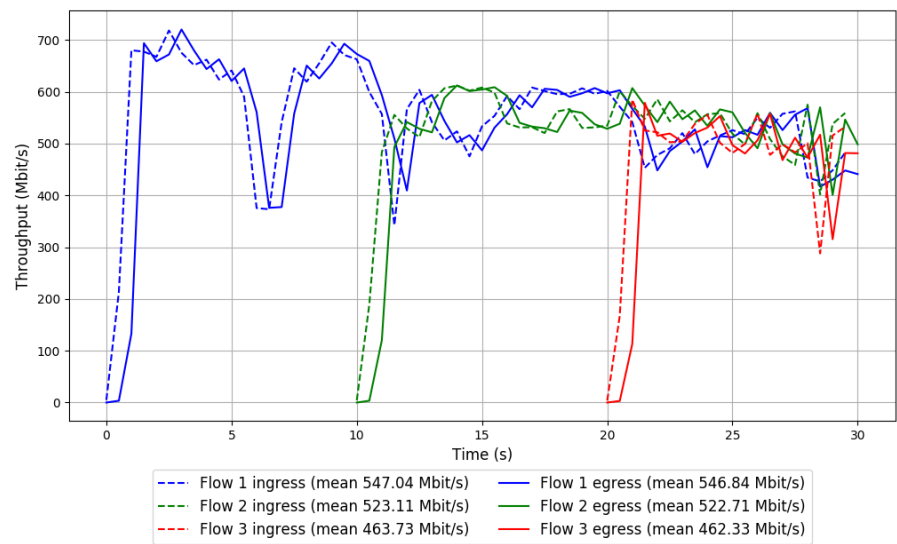Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-12-01 05:18:58
End at: 2018-12-01 05:19:28
Local clock offset: -0.139 ms
Remote clock offset: -0.078 ms


# Below is generated by plot.py at 2018-12-01 09:51:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1043.21 Mbit/s
95th percentile per-packet one-way delay: 76.468 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 558.75 Mbit/s
95th percentile per-packet one-way delay: 70.030 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 513.07 Mbit/s
95th percentile per-packet one-way delay: 71.179 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 433.58 Mbit/s
95th percentile per-packet one-way delay: 101.459 ms
Loss rate: 0.67%
```
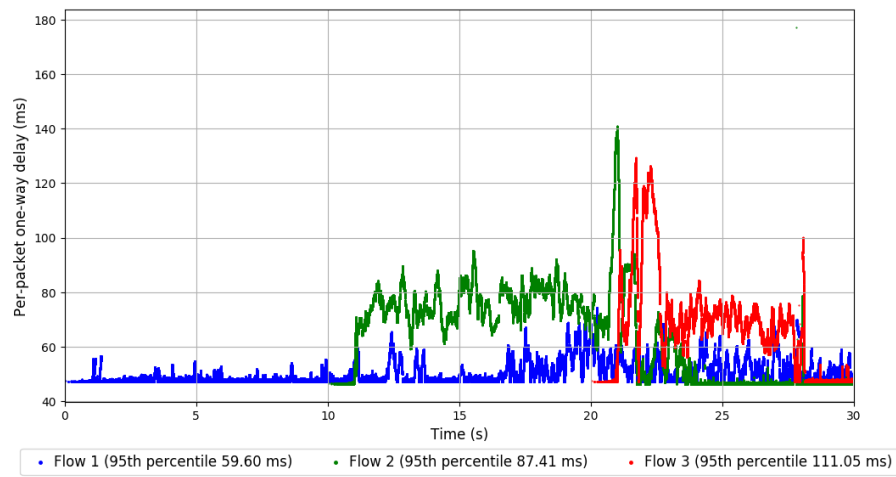
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-12-01 05:52:17
End at: 2018-12-01 05:52:47
Local clock offset: 0.177 ms
Remote clock offset: -0.018 ms


# Below is generated by plot.py at 2018-12-01 09:52:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 868.20 Mbit/s
95th percentile per-packet one-way delay: 67.150 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 336.89 Mbit/s
95th percentile per-packet one-way delay: 47.548 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 545.16 Mbit/s
95th percentile per-packet one-way delay: 66.450 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 510.29 Mbit/s
95th percentile per-packet one-way delay: 78.106 ms
Loss rate: 1.13%
```
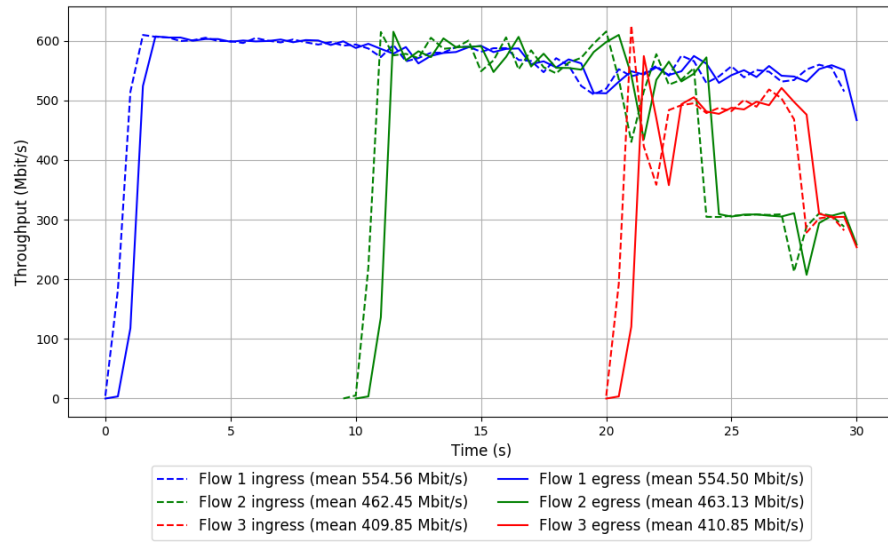
Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2018-12-01 06:25:17
End at: 2018-12-01 06:25:47
Local clock offset: -0.13 ms
Remote clock offset: -0.053 ms


# Below is generated by plot.py at 2018-12-01 10:02:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1047.20 Mbit/s
95th percentile per-packet one-way delay: 81.224 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 546.84 Mbit/s
95th percentile per-packet one-way delay: 107.100 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 522.71 Mbit/s
95th percentile per-packet one-way delay: 73.237 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 462.33 Mbit/s
95th percentile per-packet one-way delay: 79.414 ms
Loss rate: 1.23%
```

Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2018-12-01 06:58:33
End at: 2018-12-01 06:59:03
Local clock offset: -0.075 ms
Remote clock offset: -0.099 ms


# Below is generated by plot.py at 2018-12-01 10:02:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 998.52 Mbit/s
95th percentile per-packet one-way delay: 82.946 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 554.50 Mbit/s
95th percentile per-packet one-way delay: 59.598 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 463.13 Mbit/s
95th percentile per-packet one-way delay: 87.406 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 410.85 Mbit/s
95th percentile per-packet one-way delay: 111.054 ms
Loss rate: 0.71%
```
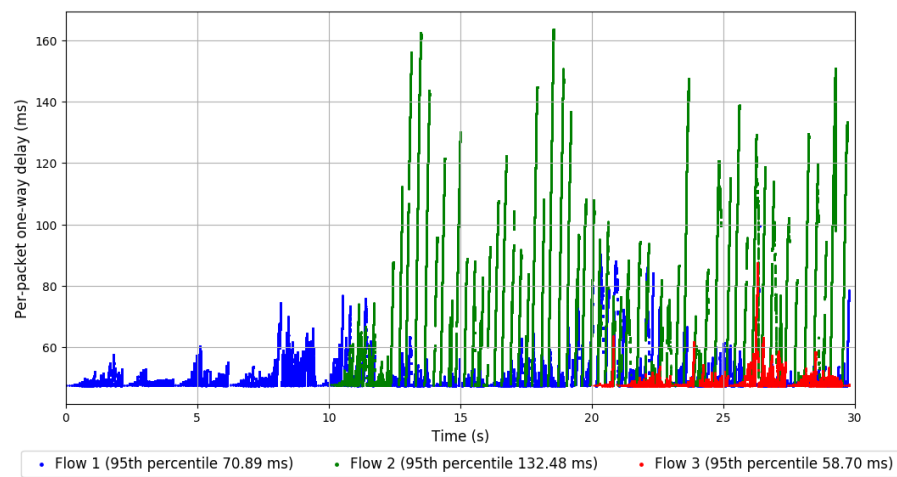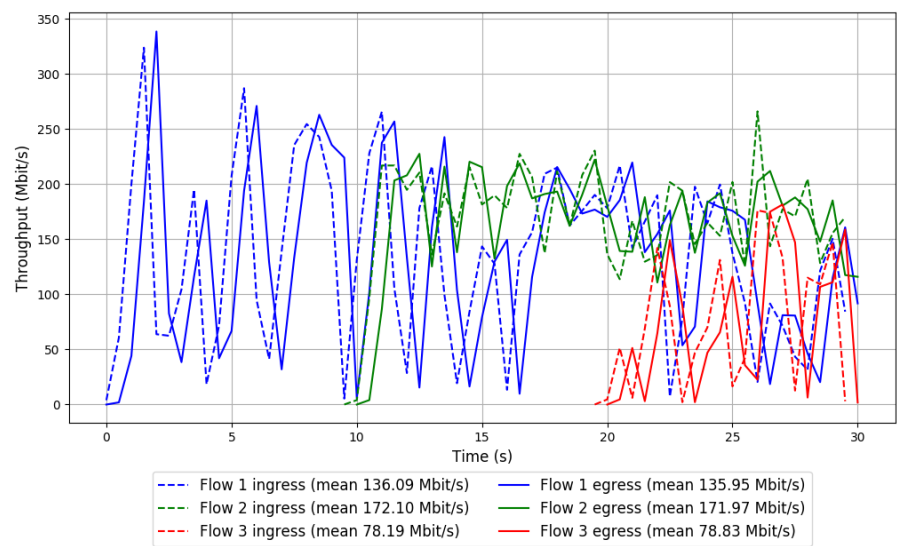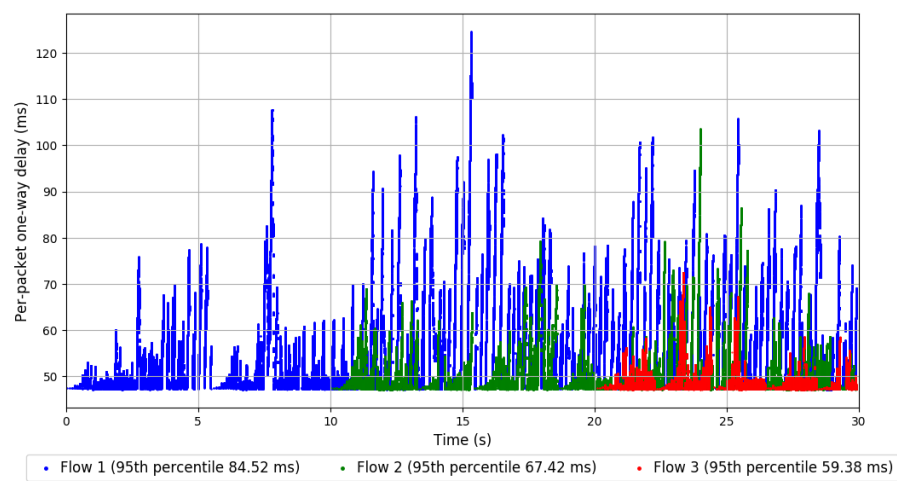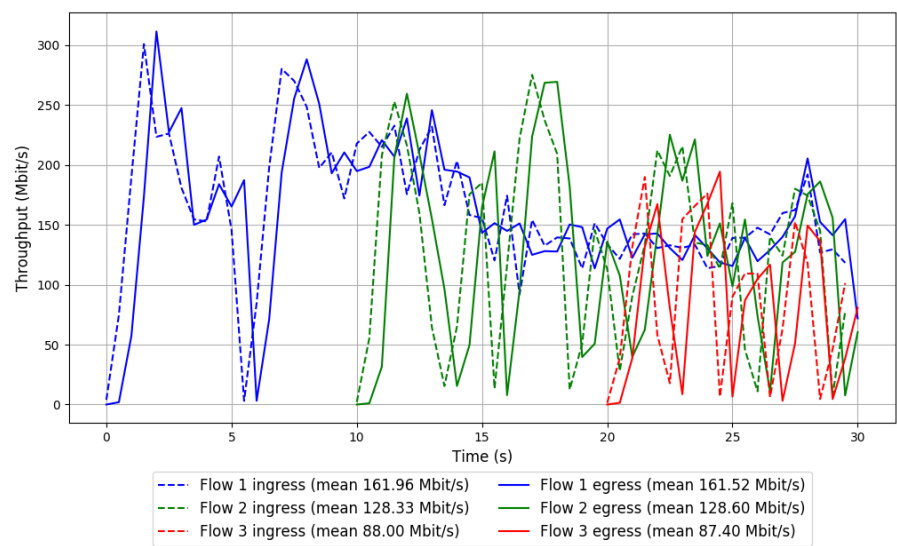
Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2018-12-01 04:40:47
End at: 2018-12-01 04:41:17
Local clock offset: 0.267 ms
Remote clock offset: -0.03 ms

# Below is generated by plot.py at 2018-12-01 10:02:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 275.69 Mbit/s
95th percentile per-packet one-way delay: 113.984 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 135.95 Mbit/s
95th percentile per-packet one-way delay: 70.885 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 171.97 Mbit/s
95th percentile per-packet one-way delay: 132.480 ms
Loss rate: 1.34%
-- Flow 3:
Average throughput: 78.83 Mbit/s
95th percentile per-packet one-way delay: 58.697 ms
Loss rate: 0.15%
```

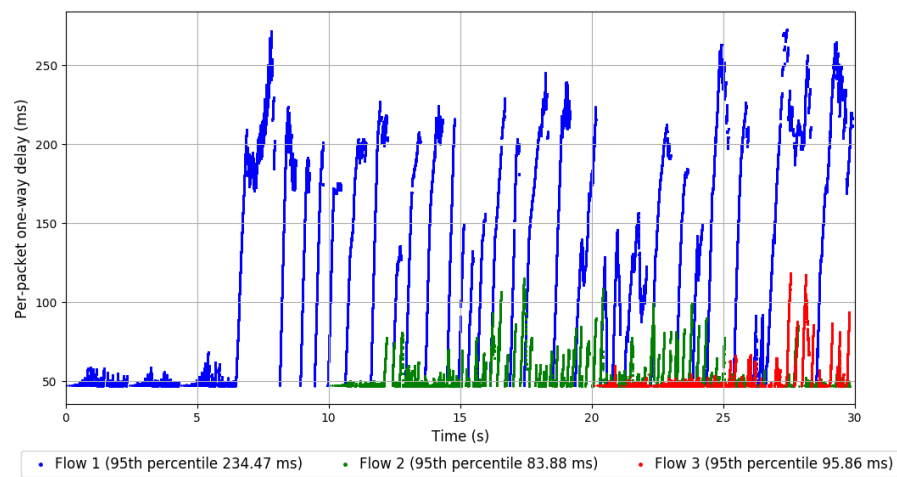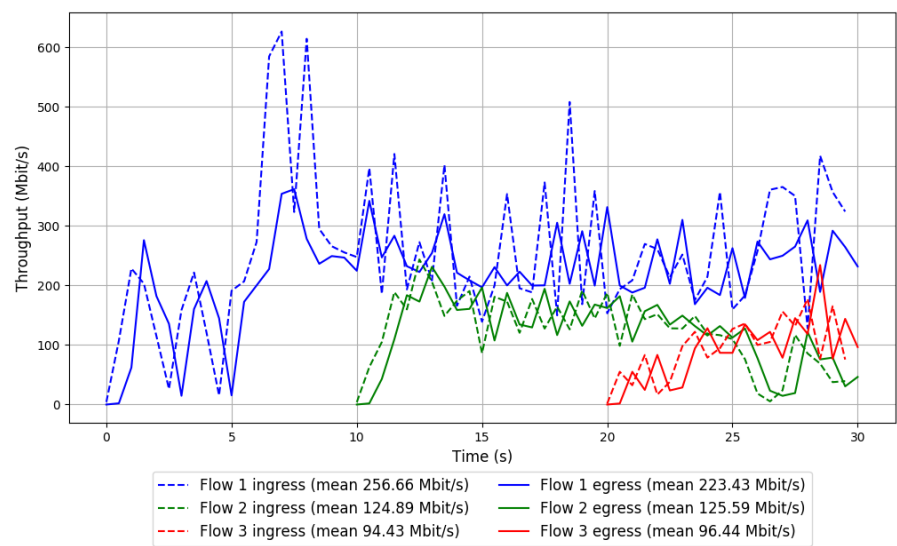Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-12-01 05:13:46
End at: 2018-12-01 05:14:16
Local clock offset: -0.104 ms
Remote clock offset: -0.116 ms

# Below is generated by plot.py at 2018-12-01 10:02:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 275.67 Mbit/s
95th percentile per-packet one-way delay: 78.794 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 161.52 Mbit/s
95th percentile per-packet one-way delay: 84.517 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 128.60 Mbit/s
95th percentile per-packet one-way delay: 67.419 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 87.40 Mbit/s
95th percentile per-packet one-way delay: 59.383 ms
Loss rate: 1.62%
```
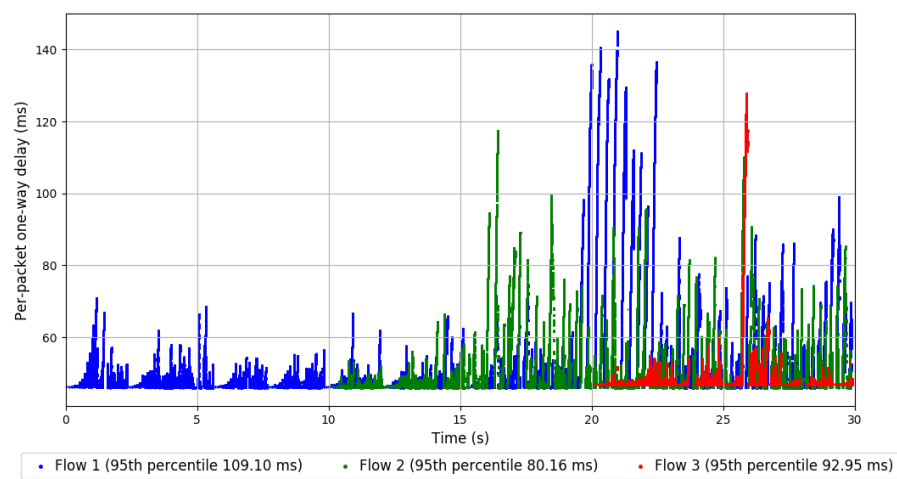
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-12-01 05:46:54
End at: 2018-12-01 05:47:24
Local clock offset: -0.52 ms
Remote clock offset: -0.031 ms


# Below is generated by plot.py at 2018-12-01 10:02:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 337.85 Mbit/s
95th percentile per-packet one-way delay: 223.910 ms
Loss rate: 9.16%
-- Flow 1:
Average throughput: 223.43 Mbit/s
95th percentile per-packet one-way delay: 234.475 ms
Loss rate: 13.22%
-- Flow 2:
Average throughput: 125.59 Mbit/s
95th percentile per-packet one-way delay: 83.876 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 96.44 Mbit/s
95th percentile per-packet one-way delay: 95.858 ms
Loss rate: 0.02%
```

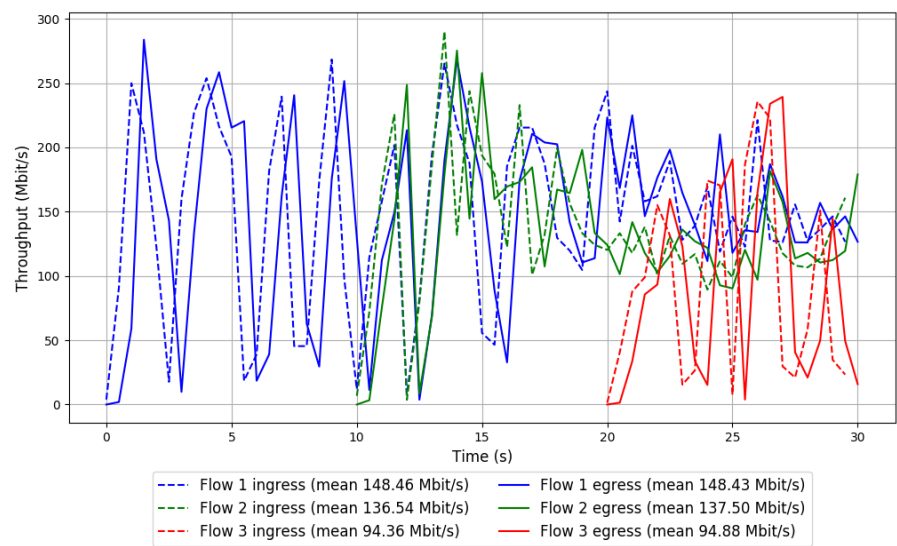Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-12-01 06:20:04
End at: 2018-12-01 06:20:34
Local clock offset: -0.457 ms
Remote clock offset: -0.054 ms


# Below is generated by plot.py at 2018-12-01 10:02:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 270.70 Mbit/s
95th percentile per-packet one-way delay: 92.577 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 148.43 Mbit/s
95th percentile per-packet one-way delay: 109.099 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 137.50 Mbit/s
95th percentile per-packet one-way delay: 80.158 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 94.88 Mbit/s
95th percentile per-packet one-way delay: 92.951 ms
Loss rate: 0.43%
```

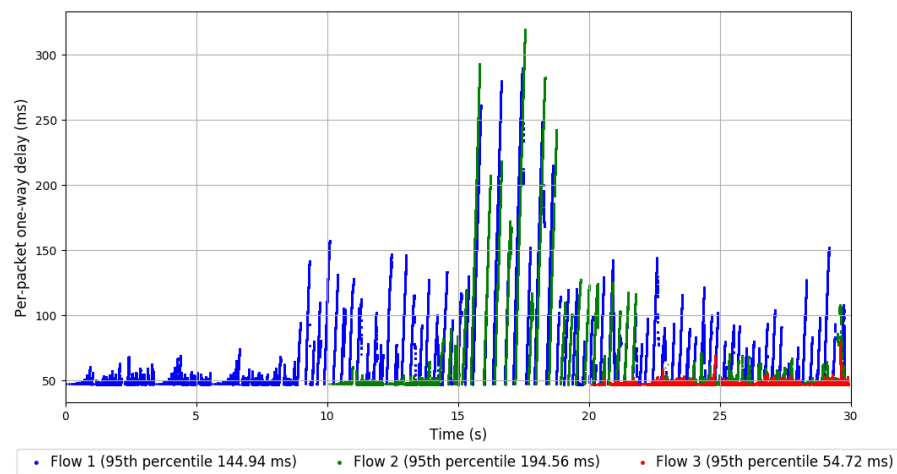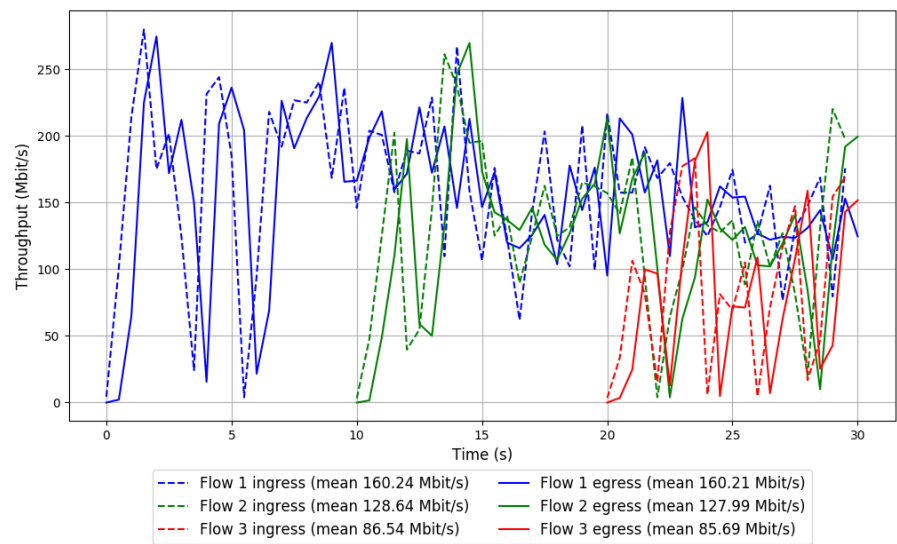Run 4: Report of Verus — Data Link

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```
Run 5: Statistics of Verus

Start at: 2018-12-01 06:53:19
End at: 2018-12-01 06:53:49
Local clock offset: -0.084 ms
Remote clock offset: -0.114 ms


# Below is generated by plot.py at 2018-12-01 10:02:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 272.90 Mbit/s
95th percentile per-packet one-way delay: 155.185 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 160.21 Mbit/s
95th percentile per-packet one-way delay: 144.935 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 127.99 Mbit/s
95th percentile per-packet one-way delay: 194.561 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 85.69 Mbit/s
95th percentile per-packet one-way delay: 54.723 ms
Loss rate: 1.90%
```
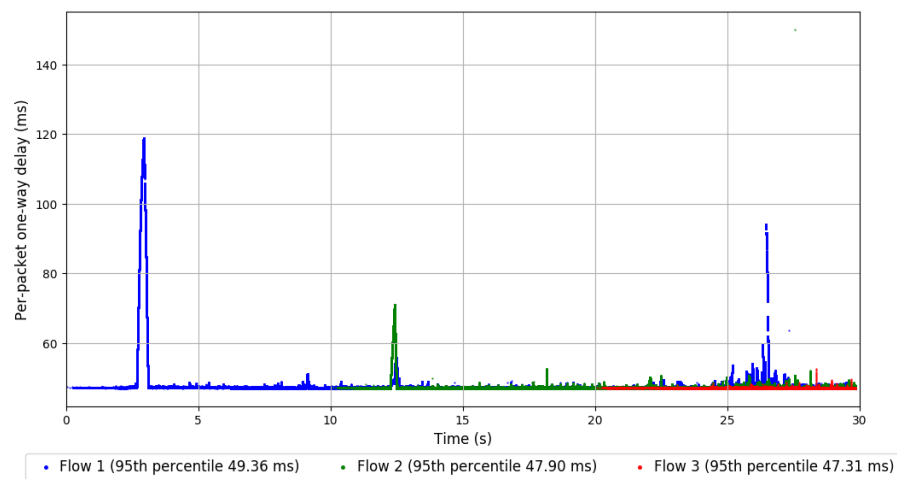
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-12-01 04:30:12
End at: 2018-12-01 04:30:42
Local clock offset: -0.106 ms
Remote clock offset: -0.02 ms

# Below is generated by plot.py at 2018-12-01 10:02:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 532.40 Mbit/s
95th percentile per-packet one-way delay: 48.902 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 368.68 Mbit/s
95th percentile per-packet one-way delay: 49.356 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 234.41 Mbit/s
95th percentile per-packet one-way delay: 47.896 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 24.50 Mbit/s
95th percentile per-packet one-way delay: 47.313 ms
Loss rate: 1.84%
```
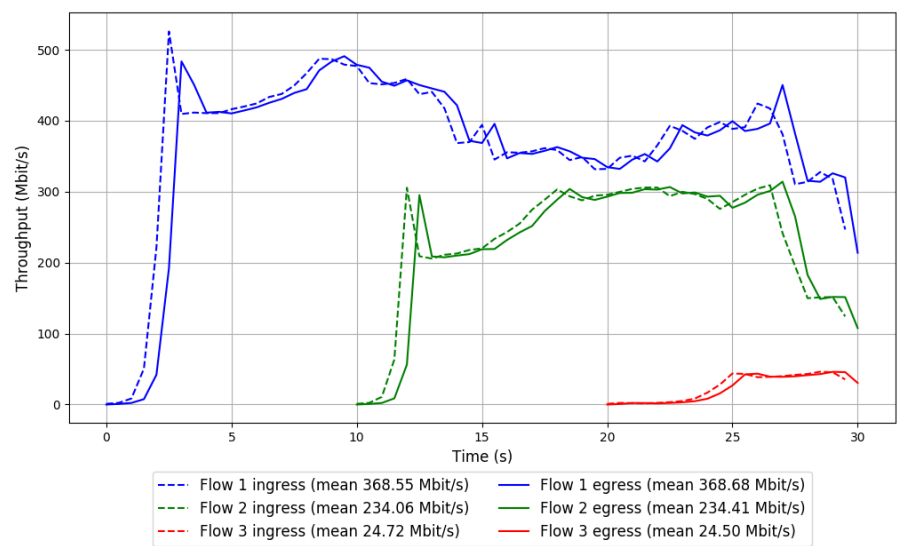
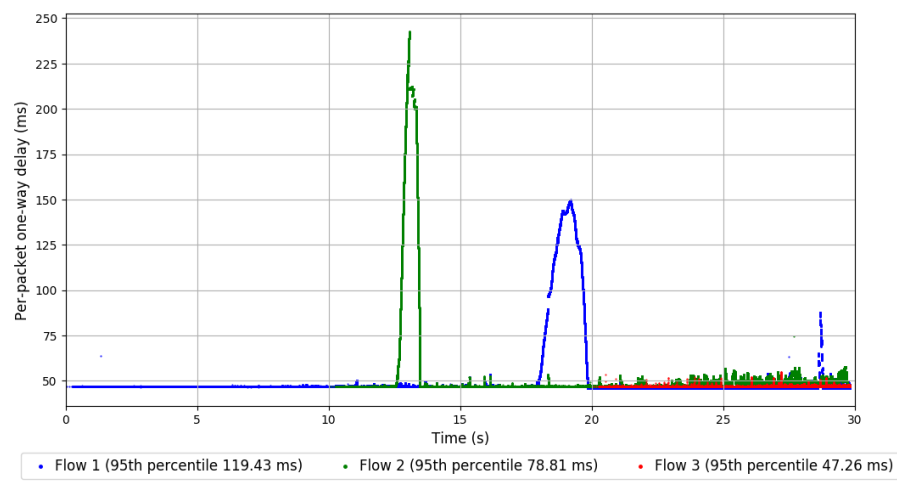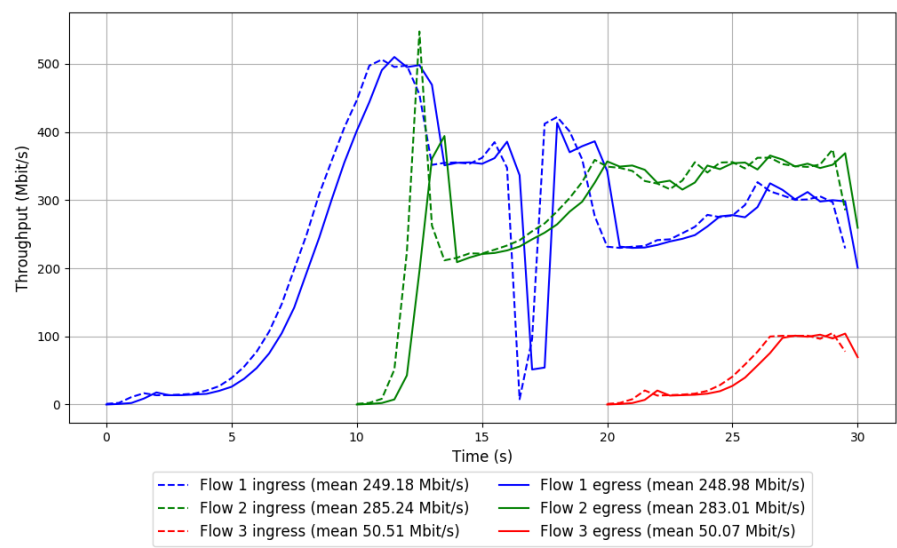Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-12-01 05:03:18
End at: 2018-12-01 05:03:48
Local clock offset: -0.496 ms
Remote clock offset: -0.039 ms

# Below is generated by plot.py at 2018-12-01 10:02:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 453.33 Mbit/s
95th percentile per-packet one-way delay: 110.101 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 248.98 Mbit/s
95th percentile per-packet one-way delay: 119.434 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 283.01 Mbit/s
95th percentile per-packet one-way delay: 78.815 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 50.07 Mbit/s
95th percentile per-packet one-way delay: 47.255 ms
Loss rate: 1.82%
```

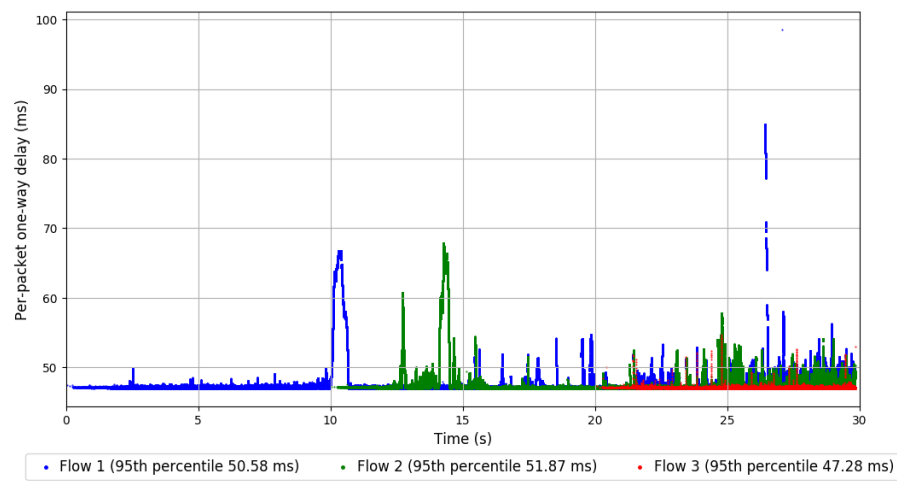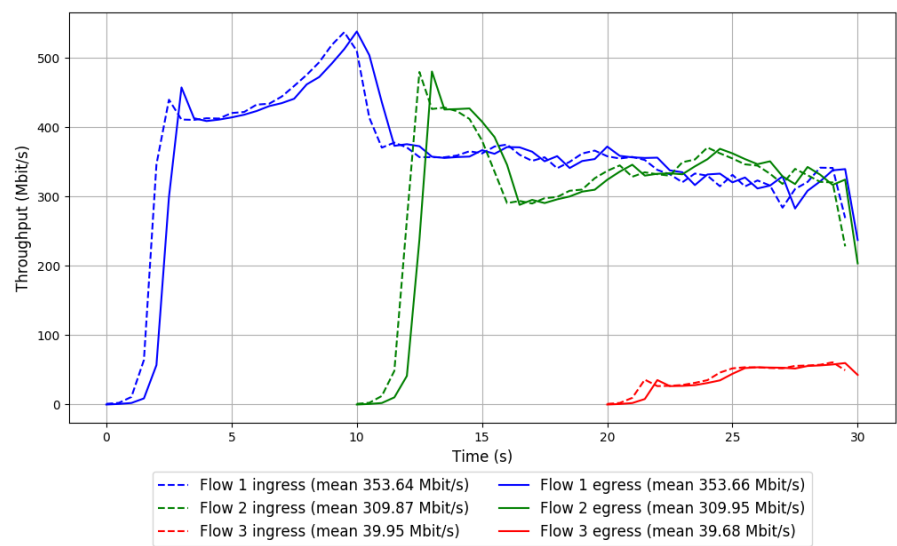Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-12-01 05:36:23
End at: 2018-12-01 05:36:53
Local clock offset: -0.171 ms
Remote clock offset: -0.035 ms


# Below is generated by plot.py at 2018-12-01 10:03:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 572.39 Mbit/s
95th percentile per-packet one-way delay: 51.052 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 353.66 Mbit/s
95th percentile per-packet one-way delay: 50.578 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 309.95 Mbit/s
95th percentile per-packet one-way delay: 51.871 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 39.68 Mbit/s
95th percentile per-packet one-way delay: 47.278 ms
Loss rate: 1.57%
```

Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-12-01 06:09:29
End at: 2018-12-01 06:09:59
Local clock offset: -0.142 ms
Remote clock offset: -0.03 ms

# Below is generated by plot.py at 2018-12-01 10:04:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 530.48 Mbit/s
95th percentile per-packet one-way delay: 53.073 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 263.80 Mbit/s
95th percentile per-packet one-way delay: 50.969 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 319.75 Mbit/s
95th percentile per-packet one-way delay: 72.399 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 165.53 Mbit/s
95th percentile per-packet one-way delay: 47.907 ms
Loss rate: 1.24%
```
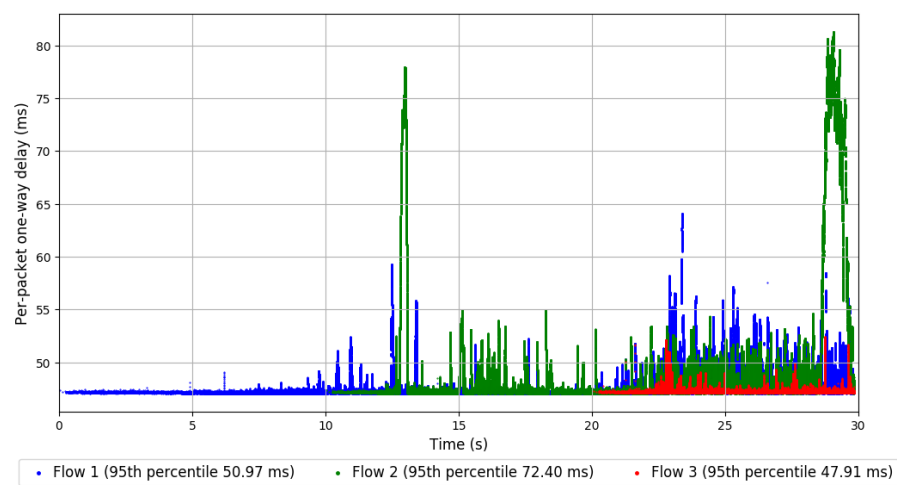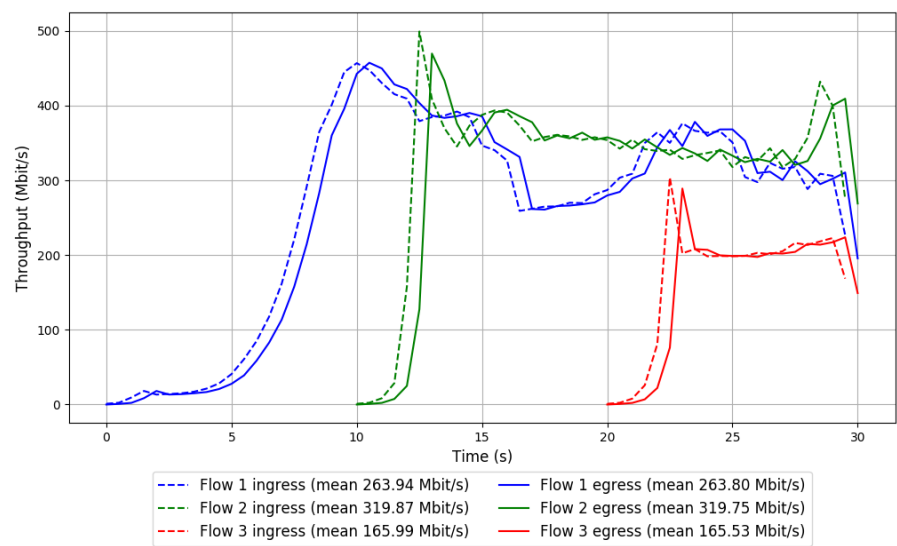
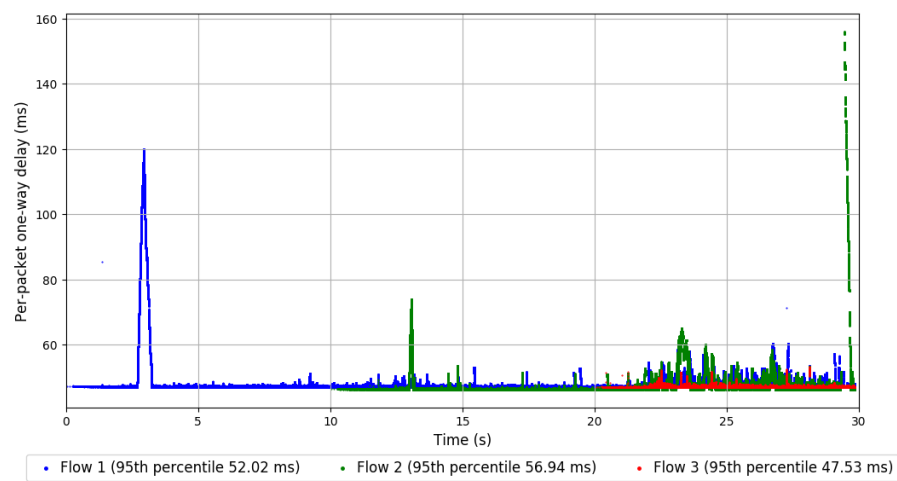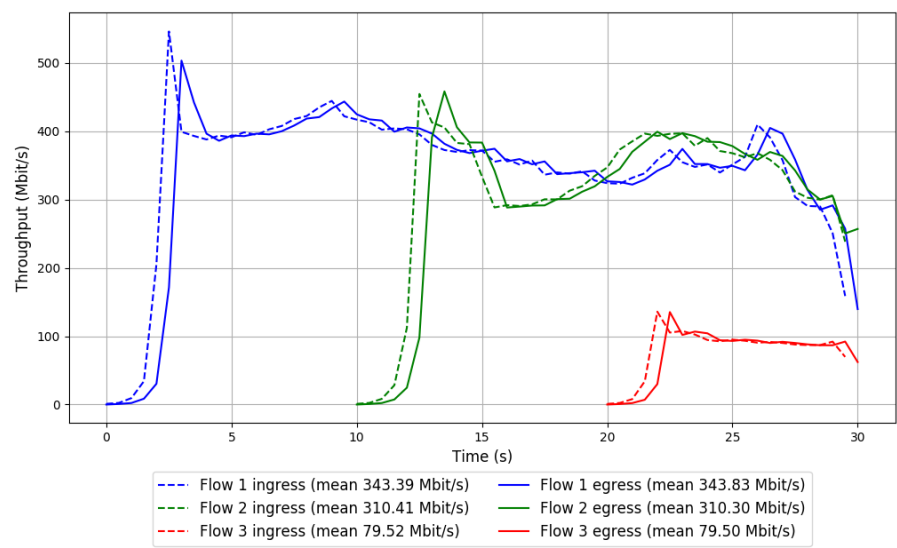Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-12-01 06:42:33
End at: 2018-12-01 06:43:03
Local clock offset: -0.101 ms
Remote clock offset: -0.056 ms


# Below is generated by plot.py at 2018-12-01 10:04:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 575.95 Mbit/s
95th percentile per-packet one-way delay: 53.563 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 343.83 Mbit/s
95th percentile per-packet one-way delay: 52.023 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 310.30 Mbit/s
95th percentile per-packet one-way delay: 56.943 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 79.50 Mbit/s
95th percentile per-packet one-way delay: 47.528 ms
Loss rate: 1.03%
```
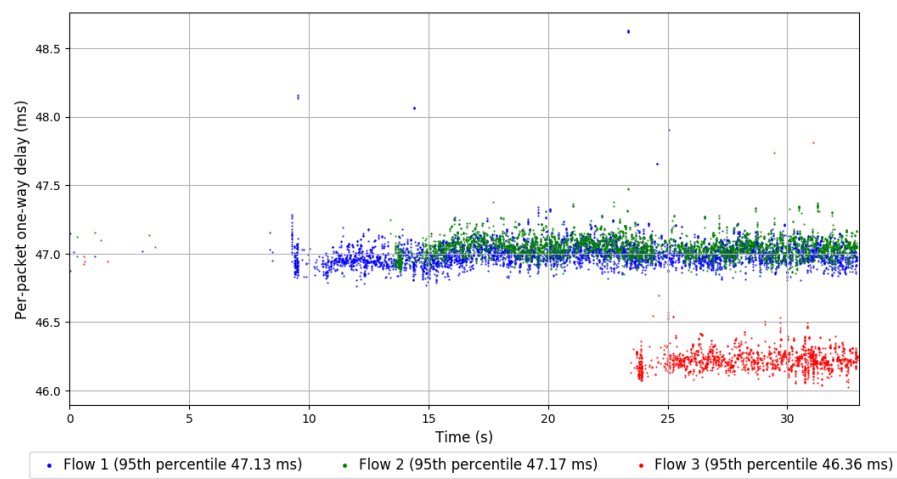
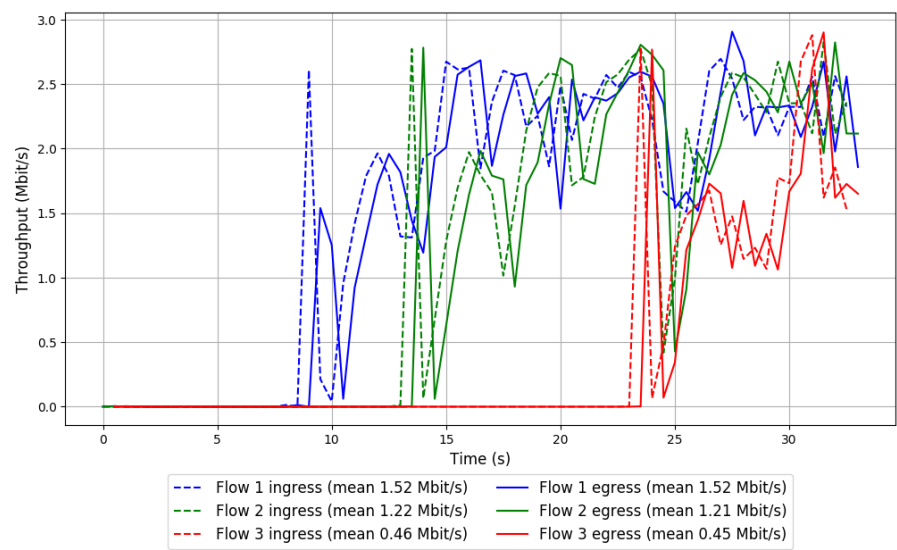Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-12-01 04:49:21
End at: 2018-12-01 04:49:51
Local clock offset: -0.469 ms
Remote clock offset: -0.075 ms


# Below is generated by plot.py at 2018-12-01 10:04:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.17 Mbit/s
95th percentile per-packet one-way delay: 47.142 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 1.52 Mbit/s
95th percentile per-packet one-way delay: 47.126 ms
Loss rate: 0.70%
-- Flow 2:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 47.172 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 46.364 ms
Loss rate: 0.49%
```

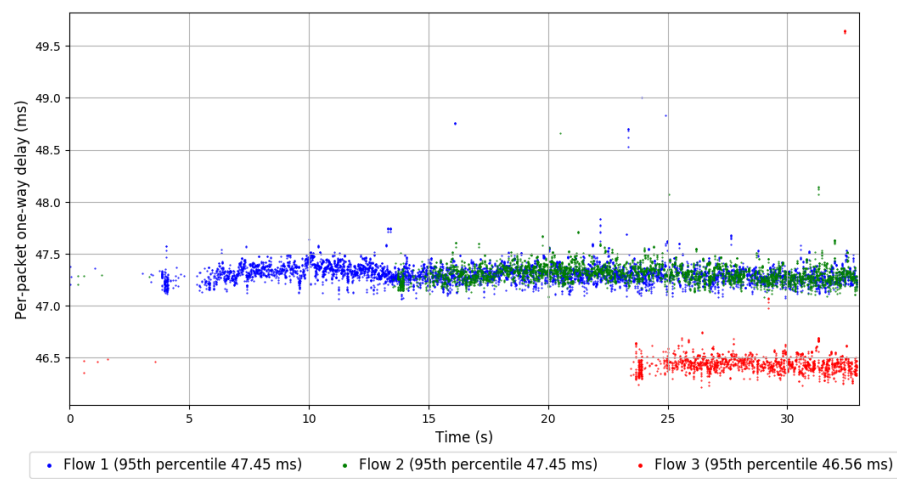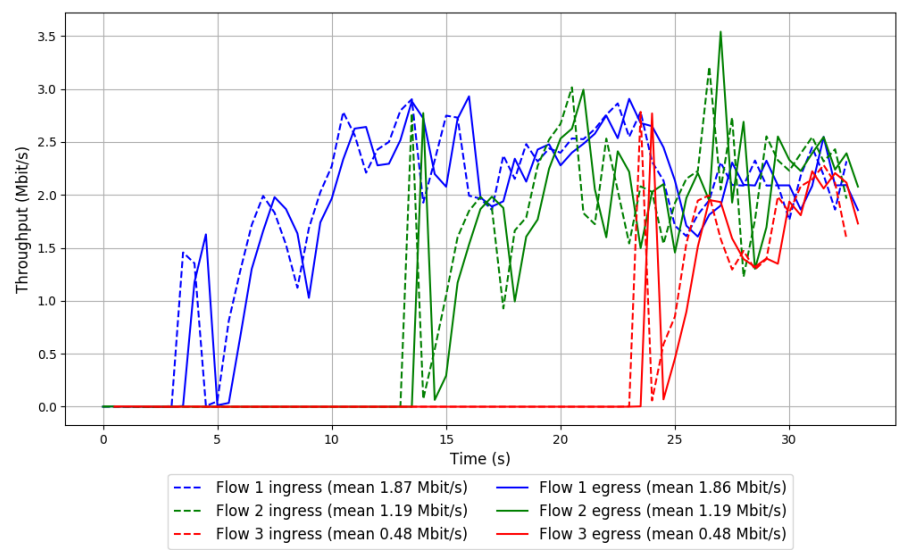Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-12-01 05:22:19
End at: 2018-12-01 05:22:49
Local clock offset: -0.212 ms
Remote clock offset: -0.106 ms


# Below is generated by plot.py at 2018-12-01 10:04:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.51 Mbit/s
95th percentile per-packet one-way delay: 47.441 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 1.86 Mbit/s
95th percentile per-packet one-way delay: 47.447 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 47.450 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 46.560 ms
Loss rate: 0.39%
```

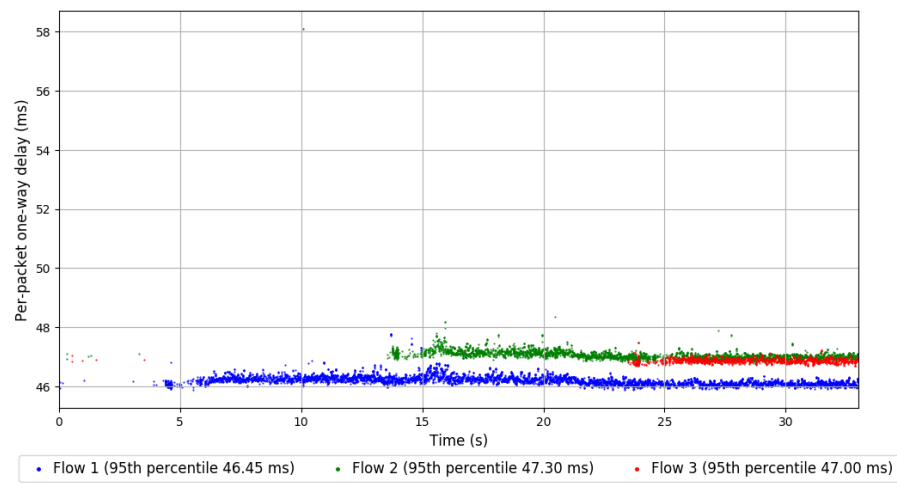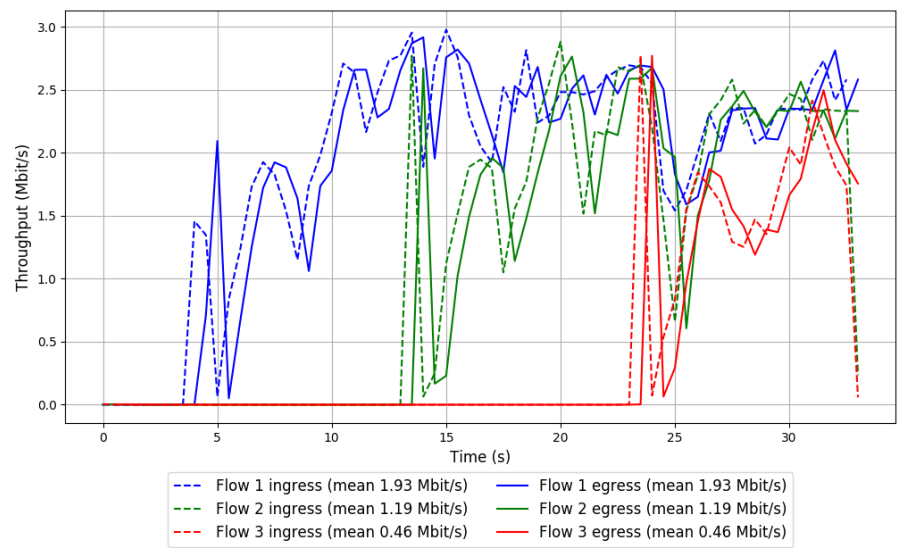Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-12-01 05:55:28
End at: 2018-12-01 05:55:58
Local clock offset: -0.579 ms
Remote clock offset: -0.034 ms


# Below is generated by plot.py at 2018-12-01 10:04:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.56 Mbit/s
95th percentile per-packet one-way delay: 47.190 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 46.448 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 47.299 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 47.002 ms
Loss rate: 0.58%
```

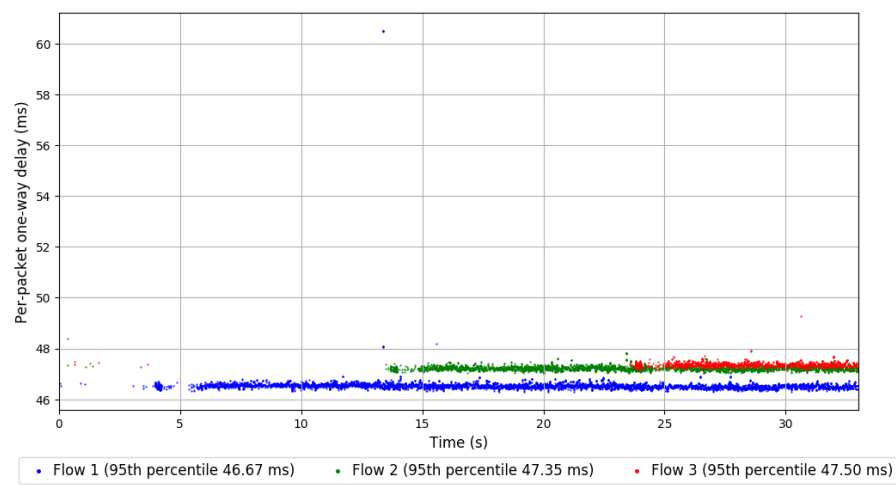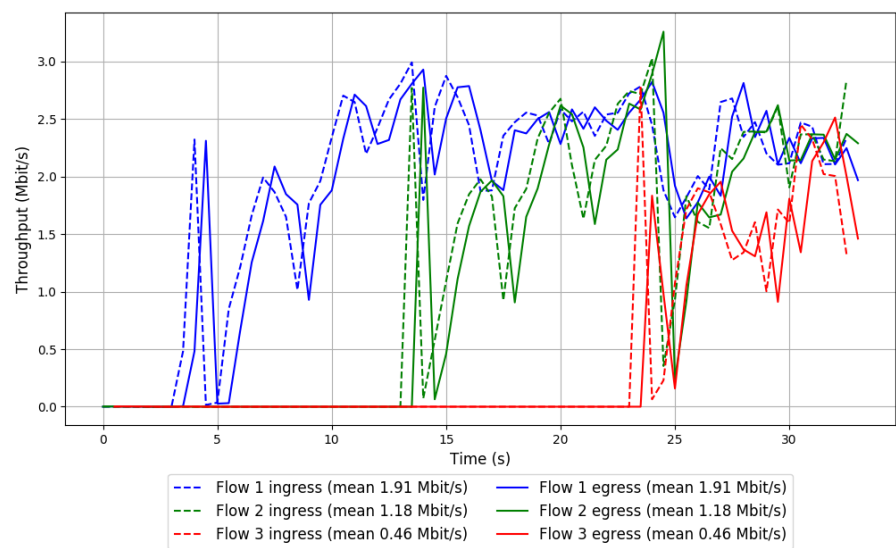Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-12-01 06:28:39
End at: 2018-12-01 06:29:09
Local clock offset: -0.111 ms
Remote clock offset: -0.106 ms


# Below is generated by plot.py at 2018-12-01 10:04:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.53 Mbit/s
95th percentile per-packet one-way delay: 47.389 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 46.671 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 47.352 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 47.500 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-12-01 07:01:52
End at: 2018-12-01 07:02:22
Local clock offset: -0.044 ms
Remote clock offset: -0.084 ms


# Below is generated by plot.py at 2018-12-01 10:04:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.55 Mbit/s
95th percentile per-packet one-way delay: 47.446 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 46.738 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 47.522 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 46.676 ms
Loss rate: 0.21%
```

Run 5: Report of WebRTC media — Data Link

Flow 1 ingress (mean 1.92 Mbit/s) — Flow 1 egress (mean 1.92 Mbit/s)
Flow 2 ingress (mean 1.18 Mbit/s) — Flow 2 egress (mean 1.18 Mbit/s)
Flow 3 ingress (mean 0.48 Mbit/s) — Flow 3 egress (mean 0.48 Mbit/s)

Flow 1 (95th percentile 46.74 ms) • Flow 2 (95th percentile 47.52 ms) • Flow 3 (95th percentile 46.68 ms)